APPENDIX F

Comments on the Draft Environmental Assessment and Responses to Comments

A. Persons and Organizations Commenting in Writing

Comments are listed chronologically and comment identification numbers are in parentheses:

1. Jane Kelly, Director, California Office, Public Citizen, July 9, 2002 (JK-1 – JK-2)
2. Marylia Kelley, Executive Director, Tri-Valley CAREs, July 9, 2002 (MK-1 – MK-4)
3. Gene Bernardi, Committee to Minimize Toxic Waste, April 15, 2005 (GB-1 – GB-4)
4. L.A. Wood, January 9, 2006 (LAW-1 – LAW-3)
5. Richard C. Van Sluyters, March 19, 2006[1] (RC-1)
6. L.A. Wood, Berkeley Environmental Commission and Pamela Sihvola, Committee to Minimize Toxic Waste, March 19, 2006 (LWPS-1 – LWPS-8)
7. East Bay Municipal Utility District, April 10, 2006 (EBMUD-1 – EBMUD-2)
8. Peter Selz, April 10, 2006 (PS-1)
9. Arrietta Chakos, Assistant City Manager, City of Berkeley, April 11, 2006 (AC-1)
10. Janet Homrighausen, Senior Planner, City of Berkeley, April 12, 2006 (JH-1 – JH-2)
11. Phil Kamlarz, City Manager, City of Berkeley, April 12, 2006 (PK-1 – PK-5)
12. Daniella Thompson and James Sharp, April 21, 2006[2] (DT-1 – DT-4)
13. Hank Field, Environmental Specialist, UC Berkeley Office of Environment, Health and Safety, April 25, 2006[3] (HF-1 – HF-3)
14. PhoeBe ANNE (sorgen), Co-chair, Berkeley Fellowship of Unitarian Universalists' Social Justice Committee, May 1, 2006[4] (PBA-1)
15. City of Berkeley Landmarks Preservation Commission, May 4, 2006 (LPC-1 – LPC-8)
16. Environmental Health Subcommittee to the Community Health Commission, City of Berkeley, May 11, 2006 (EHS-1 – EHS-17)
17. Phil Kamlarz, City Manager, City of Berkeley, May 22, 2006 (K-1 – K-2)
18. Pamela Sihvola, Co-Chair, Committee to Minimize Toxic Waste, May 22, 2006 (CMTW-1 - CMTW-55)
19. Amado Y. Cabezas, May 22, 2006[5] (AYC-1 – AYC-2)
20. Wendy Cosin, Deputy Planning Director, City of Berkeley Planning and Development Department, June 21, 2006 (CBPDD-1 – CBPDD-15)
21. Jim Cunningham (JC-1 – JC-2)

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1 Email date.
2 Email date.
3 Email date.
4 The commenter also submitted duplicate comments via email on May 4, 2006.
5 Email date.

Note: No federal agency submitted comments on the Draft EA.

B. Comments and Responses on the Environmental Assessment

This section presents comments received on the EA (which are reproduced herein) and LBNL responses to the comments. Comments are numbered and keyed to the various communications. Unless otherwise specified, all references to chapters and page numbers pertain to this Environmental Assessment.

ATTACHMENT # 10 D
Comment Letter JK

Buyers Up • Congress Watch • Critical Mass • Global Trade Watch • Health Research Group • Litigation Group
Joan Claybrook, President

July 9, 2002

Members of the Berkeley City Council
2180 Milvia Street
Berkeley, CA 94704

RE: Support for Item # 32 on tonight's city council agenda

To the Honorable Members of the Berkeley City Council:

On behalf of Public Citizen, I am writing to urge your support for Item # 32 on tonight's city council agenda, a resolution calling for a halt to the demolition of the Bevatron facility and transport of all its radioactive and hazardous materials and waste.

Lawrence Berkeley National Laboratories began demolition and removal of Bevatron, a huge accelerator facility that has become radioactive during its 40 years of operation. This process, lasting at least 7 years and involving the removal of 40,000 tons of radioactive and hazardous waste, has and will continue pose public health risks to residents of Berkeley where the facility is located, as well as Livermore and Richmond, where the waste is being dumped. Much of the radioactive metals are being "recycled" into the national consumer metal goods stream, further threatening the health of an unknown number of people who may be exposed to these products.

Due to the nature of this process and the potential impacts on public health and safety, it is crucial that local residents be involved. Therefore, we are urging that this demolition be halted until an Environmental Impact Statement and Environmental Impact Report be submitted well in advance of a public hearing for review and comment.

Thank you in advance for your support of this important measure.

Sincerely,

Jane Kelly

Jane Kelly
Director, California Office

Ralph Nader, Founder

1615 Broadway, Ninth Floor • Oakland, CA 94612 • (510) 663-0888 • fax: (510) 663-8569 • www.citizen.org

Jane Kelly, Director, California Office, Public Citizen, July 9, 2002 (Comments Identified as "JK-1 and JK-2")

Comments were received from Jane Kelly before the public review period on the Environmental Assessment. LBNL has chosen to respond because these comments are pertinent to the Proposed Action.

Response JK-1

The commenter urges a "halt to the demolition of the Bevatron facility." Demolition of the Bevatron facility has not yet begun. As stated in this Environmental Assessment, the duration of the physical work for the project may vary from four to seven years, from early 2008 through 2012, contingent upon funding and results of material sampling. As stated on page 1, a variant of the Proposed Action could reduce the minimum duration of the project from four years to three and a half years, but this reduction in schedule would have no resulting effect on project impacts, including traffic impacts. See also revised page 80 and Appendix G.

Response JK-2

Approximately half of the materials to be removed would consist of non-hazardous debris and other items typical of building demolition projects. Hazardous waste, low-level radioactive waste, and mixed waste would also be shipped from the site. The Proposed Action would seek to reuse or recycle materials (e.g., uncontaminated metals and concrete) where feasible. Items that could not be reused or recycled would be handled and disposed in accordance with applicable policies and regulations.

Disposal of the materials that would be generated by the Proposed Action is discussed at various places in the EA, including Sections 5.1.5, Hazards and Human Health (e.g., pages 68-71), 5.1.10, Traffic and Circulation (e.g., pages 79-84), 5.1.8, Public Services (e.g., pages 76-77) and 5.1.9 Public Utilities (e.g., pages 77-79).

ATTACHMENT #10E

Comment Letter MK

Tri-Valley CAREs

Communities **A**gainst a **R**adioactive **E**nvironment

2582 Old First Street, Livermore, CA 94550 • (925) 443-7148 • Fax (925) 443-0177

Peace Justice Environment since 1983

July 9, 2002

The Honorable Shirley Dean, Mayor
and City Councilmembers
2180 Milvia Street
Berkeley, CA 94704

by fax to each office

Dear Mayor and Councilmembers:

I write in support of item 32 on tonight's Council Agenda. My organization has just been informed that a Livermore area landfill may become a recipient of non-radioactive wastes from the deconstruction of the Lawrence Berkeley National Laboratory's (LBNL) Bevatron.

We are concerned, in part, because we have not seen any Environmental Impact Statement, Environmental Assessment or other National Environmental Policy Act (NEPA) analysis performed on the Bevatron decontamination and decommissioning (D&D) project. Therefore, we have been ***unable*** to ascertain, for example, (1) what method(s) LBNL will employ to determine whether radioactivity is present in the debris, and (2) what the detection and release limits will be. We have similar questions regarding the potential for some of the debris to contain hazardous as well as radioactive contamination.

Further, we have not seen written documentation on final disposition of the debris.

I have seen LBNL materials that estimate the Bevatron and HILAC accelerators together contain more than 40,000 tons of concrete shielding blocks and metallic equipment. The sections of the document I have do not say how much of the 40,000 tons is associated with the Bevatron and how much the HILAC. However, it would seem that the D&D of the Bevatron will be a major federal project that could have an adverse environmental impact. Therefore, an Environmental Impact Statement appears to be needed.

Tri-Valley CAREs does not have a final position on the Bevatron removal. We do, however, urge you to ensure that LBNL goes through the proper NEPA process and solicits public input before going ahead with this massive project.

Thank you for your attention. Please inform me of your decision.

Sincerely,

Marylia Kelley

Marylia Kelley
Executive Director

Marylia Kelley, Executive Director, Tri-Valley CAREs, July 9, 2002 (Comments Identified as "MK-1 through MK-4")

Comments were received from Marylia Kelley before the public review period on the Draft EA. LBNL has chosen to respond because these comments are pertinent to the Proposed Action.

Response MK-1

This comment was submitted before the Draft Environmental Assessment was published and before the public comment period began.

The methods LBNL will employ to determine radioactivity present in debris (if any), as well as what the detection and release limits will be, are discussed in Section 5.1.5, Hazards and Human Health, pages 68-71.

Response MK-2

See response MK-1. As stated in response JK-2, disposal of the materials generated by the Proposed Action is discussed in the EA; see Sections 5.1.5, Hazards and Human Health (pages 68-71); 5.1.10, Traffic and Circulation (pages 79-84); 5.1.8, Public Services (pages 76-77); and 5.1.9 Public Utilities (pages 77-79).

Response MK-3

DOE Guidance for compliance with NEPA is contained in 10 CFR Part 1021. Appendix C to Subpart D to Part 1021 is entitled "Classes of Actions that Normally Require EAs But Not Necessarily EISs," the Proposed Action falls under item C11. "Siting/construction/operation/ decommissioning of low- or medium-energy particle acceleration facility with primary beam energy greater than approximately 100 MeV." This guidance indicates the level of NEPA review that DOE generally anticipates for such a facility is an EA, not an EIS.

Considering this guidance and the actions needed to deal with the historic aspects of the Proposed Action, the Department of Energy (DOE) has concluded that for NEPA purposes, preparation of an EA is appropriate for this action.

Response MK-4

Comment expresses respondent's position and is noted. See also responses MK-1 and MK-3.

ATTACHMENT #10A
(4 PAGES)

April 15, 2005.

Daniel Kevin
Environmental Planning Dep.
LBNL
One Cyclotron Rd. MS 90K0198
Berkeley, CA. 94720.

Re: Bevatron Demolition

Dear Mr. Kevin,

It is outrageous that the Lab is tiering the EIR for Bevatron Demolition off of an 18 year old Long Range Development Plan. And even more outrageous that the University of California, the current manager of the Lab is allowing this. It is very difficult for the public to exercise its right to know when it has to attempt to locate and assemble a 1987 EIR, a 1992 amendment and then juggle these with the Bevatron EIR Next due. The big question is why has the continuation of the LRDP started in 2000 been delayed? The 1987 EIR, as amended, does not cover the Molecular Foundry, the decommissioning of the National Tritium Facility, or the New Office building at Westgate. Since no EIR's were done for the Molecular Foundry and the NTLF decommissioning, will the cumulative effects of all these projects be properly addressed? Consider the radioactive hazardous dust from Bevatron demolition mixed together with unfiltered nanoparticles, viruses and bacteria from the Molecular Foundry. Unfortunately, I live near this soup to be. However, I am especially concerned about those students and other residents who live close to the demolition site and the route for the thousands of

GB-1

GB-2

GB-3

Re: Berkeley Demolition

trucks that will transport the Berkeley debris - some radioactive, some with asbestos, lead, mercury, P.C.B's, etc. Some of the debris contains Cobalt 60, and some Cesium 137. We already know X-rays are dangerous. That's why they finally stopped X-raying pregnant women. Cobalt 60, Now used on the Pacific Coast docks to inspect cargo containers, has 59 times the energy intensity of an X-ray. Cobalt 60 emits gamma rays. At the docks the gamma rays go from the source two plus feet from the container, passes through the 8' to 10' wide container and continues two plus feet to the detector on the other side. That's a minimum of 12'-14' or long enough that gamma rays from Cobalt 60 contaminated Berkeley debris in a truck in the right hand lane of the street (Hearst, Oxford, University Ave.) could expose people at a bus stop, on the sidewalk or in stores abutting the sidewalk. Also the gamma rays would travel left through two lanes of traffic. At a stop sign or in stalled traffic everyone surrounding the truck would get an unnecessary radiation dose. In case of accident, unretrieved debris and dust would contaminate the area for years if not decades. GB-3 cont.

Since the Berkeley is eligible for listing in the National Register of Historic Places, let's do that and allow the Berkeley and its contamination to remain on site and the radioactivity to continue to decay in place as it has been doing since its inception 50 years ago GB-4

Sincerely,

Gene Bernardi
9 Arden Rd. Berkeley, CA

(page 2 of 2 pages)

Gene Bernardi, Committee to Minimize Toxic Waste, April 15, 2005 (Comments Identified as "GB-1 through GB-4")

Comments were received from Gene Bernardi before the public review period on the Draft EA. LBNL has chosen to respond because these comments are pertinent to the Proposed Action.

Response GB-1

The primary planning document for development at LBNL is the Laboratory's Long Range Development Plan (LRDP). When the Draft of this Environmental Assessment was published in 2006, its analysis was completed in accordance with the 1987 LRDP Environmental Impact Report (EIR), as amended,[6] prepared pursuant to the California Environmental Quality Act (CEQA). Since publication of the Draft Environmental Assessment, two documents were prepared by Berkeley Lab that supersede the former LRDP and the 1987 LRDP EIR, as amended: the 2006 LBNL Long Range Development Plan and its accompanying LRDP EIR. The analysis of this Environmental Assessment, while in accordance with the 1987 LRDP EIR, as amended, is also consistent with the 2006 LBNL LRDP, as well as the 2006 LRDP EIR, which was certified on July 19, 2007.[7] NEPA documentation is not required for a University of California LRDP. Project-level NEPA and CEQA environmental analysis will be conducted if and when necessary for any future development at the Building 51 site.

Response GB-2

Cumulative impacts are discussed in Section 5.4, Cumulative Impacts, on pages 90-101, as modified by the text changes in Chapter II, Revisions to the Draft EA. The Molecular Foundry Building was not included in the Cumulative Impact Analysis because construction operations and attendant impacts were completed before any physical impacts from the Building 51 and Bevatron demolition project would occur. The Molecular Foundry Building was completed in 2006 and is now opened to the public. Any planned, pending, and/or reasonably foreseeable projects in the area of Building 51 and the Bevatron were included in the Cumulative Impact Analysis.

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6 The 1987 LRDP EIR consists of the following documents:

- The *Lawrence Berkeley Laboratory Site Development Plan Environmental Impact Report*, August 1987 (State Clearinghouse No. [19]85112610);
- The *Supplemental Environmental Impact Report for the Proposed Renewal of the Contract between the United States Department of Energy and The Regents of the University of California for Operation and Management of the Lawrence Berkeley Laboratory*, September 1992 (State Clearinghouse No. [19]91093068); and
- The *Supplemental Environmental Impact Report Addendum for the Proposed Renewal of the Contract between the United States Department of Energy and The Regents of the University of California for Operation and Management of the Ernest Orlando Lawrence Berkeley National Laboratory*, September 1997 (State Clearinghouse No. [19]91093068).

These documents are referred to collectively as the "1987 Long Range Development Plan (LRDP) EIR, as amended."

7 This Environmental Assessment includes references to the 1987 LRDP, as amended, although the analysis is also consistent with the 2006 LRDP EIR.

Response GB-3

The radiation exposure from Cobalt -60 and other radioactive contamination would be very low. The worst-case radiation exposure scenario was presented in the certified Bevatron EIR, Section F. Hazards and Hazardous Materials, page IV.F-23.

Response GB-4

The Bevatron's eligibility for listing in the National Register of Historic Places is discussed in Section 5.1.3, Cultural Resources (see pages 66-67).

With regard to radiological decay, radiological decay-in-place programs are designed for short-lived isotopes and allow the generator to hold these materials in storage until they have decayed to levels below detection limits, at which point they are managed as non-radioactive wastes. This is done for materials with isotopes that have much shorter half-lives than those present in the Bevatron. For example, regarding medical isotopes, the Nuclear Regulatory Commission authorizes "decay-in-storage" only for those isotopes that have half-lives shorter than 120 days (10 CFR 35.92). The predominant isotope in the Bevatron materials is Cobalt-60, which has a half-life of 5 years. It would be inappropriate to apply a program designed for short-lived isotopes to these materials.

In addition, radioactive materials typically are stored for 10 half-lives before they are released. This would result in storage times of 50 years or more for isotopes such as Cobalt -60. In effect, this would mean the postponement of the Proposed Action in favor of one of the alternatives examined in Section 3.2, Alternatives, e.g., the No Action alternative. The DEA concluded that this would not attain the goals of the project.

Lastly, decay in place would apply only to radioactive materials. Other hazardous materials that are or may be present at the facility, such as asbestos, lead, and chromium, are stable and do not decay.

Comment Letter LAW
ATTACHMENT 5
(13 PAGES)

Landmarks Preservation Commission
Planning & Development, City of Berkeley
Secretary Janet Homrighausen
2120 Milvia Street
Berkeley, CA 94704

January 9, 2006

Re: Bevalac Historic District & Building 51/51A, Lawrence Berkeley National Laboratory One Cyclotron Road, Berkeley, California

Dear Landmarks Preservation Commission

This is an addendum to my landmark application dated December 2, 2005, for Building 51/51A, Lawrence Berkeley National Laboratory (LBNL) One Cyclotron Road, Berkeley, California to include that of the Historic District.

The LBNL Bevalac district is eligible for the National Register of Historic Places at a national level of significance for a period 1949 to 1993. The eligibility of the Bevatron and Bevalac to the National Register is based on National Register Criteria A, B, and C. "Historic Architectural Evaluation Report" by Marjorie Dobkin and Micheal Corbett (1994) Lawrence Berkeley National Laboratory.

Under Criterion A, the Bevatron and Bevalac are associated with "significant contribution to the broader patterns of our history." They are also associated with significant contributions to the field of particle and nuclear physics and helped to establish American leadership in scientific research." LAW-1

Under Criterion B, the Bevatron and Bevalac are associated with many significant persons under National Register criterion i.e. persons associated to the historic property who are individually significant within a historic context. LAW-2

Under Criterion C, the Bevatron Building, the Accelerator Design Building (Building 64), and the HILAC Building (Building 71) are contributing elements of the Bevalac district. "Building 51 and 71 "embody the distinctive characteristics of a type" (National Register Bulletin 15:17) ; both are distinguished examples of a rare international building type, the accelerator building. Building 64 is a representative example of a research laboratory building." "The building of the Bevatron, and Bevalac possess a high degree of integrity of location, design, setting, materials, workmanship and association. Many of the changes made to the buildings themselves were all made during the period of significance, and do not constitute a loss of integrity." (See attached.) LAW-3

Respectfully,

L A Wood
1803 Bonita Avenue
Berkeley, CA 94709

Comment Letter LAW

BEVATRON AND BEVALAC
LAWRENCE BERKELEY LABORATORY

HISTORIC ARCHITECTURAL EVALUATION REPORT

PURCHASE ORDER NO. 4594410

PREPARED FOR:

LAWRENCE BERKELEY LABORATORY
And
THE U.S. DEPARTMENT OF ENERGY
One Cyclotron Road 8786706
Building 50A-4112
Berkeley, California 94720

PREPARED BY:

MARJORIE DOBKIN
MICHAEL CORBETT

MARJORIE DOBKIN
295 UNION STREET
SAN FRANCISCO, CALIFORNIA 94133

JULY, 1994

SUMMARY OF FINDINGS

In a historic architectural evaluation of the Bevatron/ Bevalac at Lawrence Berkeley Laboratory (LBL), undertaken in late 1993 and early 1994, the consultants found the facilities to be eligible as a district for the National Register of Historic Places at the national level of significance. Although less than fifty years old (normally a disqualifying factor) the Bevatron and Bevalac meet National Register Criteria Consideration G which grants an exception to the fifty year rule for properties of "exceptional importance." The elements which appear to be eligible as a district are the buildings and machines of the Bevatron and Bevalac, including the SuperHILAC (Building 71), the Bevatron (Building 51), and the Accelerator Design Building (Building 64).

The evaluation was conducted at the request of LBL, which is considering future plans for the facility as a result of its closure by the Department of Energy in February, 1993. The report highlights the scientific achievements and significant persons associated with the facility during its period of significance from 1949 (when construction of the facility got underway) to 1993, and describes the design of accelerator machines and buildings. The period of significance includes both the Bevatron period of operation from 1954 to 1974, and the Bevalac period of operation from 1974 to 1993. Documentation for the report was provided through archival research and field surveys.

The eligibility of the Bevatron and Bevalac to the National Register is based on three National Register Criteria: Criterion A, for association with events that have made a significant contribution to the broad patterns of our history; Criterion B, for association with significant persons; and Criterion C for Design/Construction in Architecture and Engineering. A property can be eligible under one or more criteria. The Bevatron/ Bevalac is eligible for the National Register because it meets the three criteria cited above (A,B,C) and it possesses most of the seven aspects of historic integrity required for the National Register -- location, design, setting, materials, workmanship, feeling and association. Most of the many modifications to the machines and buildings over the years were made within the period of significance -- 1949 to 1993 -- and do not constitute a loss of integrity. The guidelines for eligibility have been established by The Federal Code of Regulations (36 CFR Part 60), which is the code of implementing procedures of the National Historic Preservation Act of 1966, as well as National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation. A more detailed discussion of the National Register Criteria for Evaluation is presented in the Introduction portion of this report.

The report contains several sections: The **Introduction** outlines Section 106 of the National Historic Preservation Act -- the historic preservation process for federal agencies undertaking projects that may have an effect on historic properties. A **Methods** section describes the research methods used in preparing the report, and lists the libraries and archives consulted during the research process. An **Historical Overview** provides an

historical context for the study of the Bevatron and Bevalac; presents highlights of scientific work at the facility from 1954 to 1993; identifies significant persons associated with the facility; and describes the design and operation of the accelerators at the Bevatron and Bevalac. A section on **Accelerator Buildings** provides a general discussion of the accelerator building as an international and industrial type. **History of the Bevatron and Bevalac Buildings** is a detailed and site-specific study of these accelerator buildings as they were originally designed and modified over the years. **Description: Buildings** provides a description of the Bevatron and Bevalac buildings as they exist today. The **Evaluation** discusses the eligibility of the Bevatron and Bevalac to the National Register of Historic Places according to the National Register Criteria for Evaluation. Finally, the **Bibliography** contains a complete list of sources consulted in the preparation of this report.

EVALUATION

The Bevatron and Bevalac appear to be eligible as a district for the National Register of Historic Places at the national level of significance for the period 1949 to 1993. The eligibility of the Bevatron and Bevalac to the National Register is based on National Register Criteria A, B, and C. Although less than fifty years old (normally a disqualifying factor) the Bevatron and Bevalac meet Criteria Consideration G which grants an exception to the fifty-year rule for properties of "exceptional importance." Those elements which appear to be eligible are the buildings and machines of the Bevatron and Bevalac, including the HILAC (Building 71), the Bevatron (Building 51), and the Accelerator Design Building (Building 64). This evaluation has been made following the guidelines in National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation and "Proposed Council Guidance: Consideration of Highly Technical and Scientific Facilities in the Section 106 Process," prepared in November, 1993 by the Advisory Council on Historic Preservation.

National Register Criterion A

Lawrence Berkeley Laboratory's Bevatron and Bevalac are associated with events that have made a "significant contribution to the broad patterns of our history" under Criterion A (National Register Bulletin 15:12). They were among the world's leading particle accelerators during a forty-year period from 1954 to 1993. The Bevatron and Bevalac are associated with significant contributions in the fields of particle and nuclear physics, and helped to establish American leadership in scientific research. Under Criterion A, a property is eligible if it is associated with "a pattern of events or a historic trend that made a significant contribution to the development of a community, a State, or the nation" (National Register Bulletin 15:12).

In the late 1950's and early 1960's four Nobel Prizes were awarded for particle physics research conducted in whole or in part at the Bevatron. The antiproton, the antiparticle of the proton (nucleus of the hydrogen atom), was discovered at the Bevatron in 1955 by a UCRL team led by Emilio Segre and Owen Chamberlain, who won the Nobel Prize in physics in 1959. Luis Alvarez won the Nobel Prize in physics in 1968 for his development of the bubble chamber as a particle detector and for his role in discovering 18 particle resonances through work with the bubble chambers at the Bevatron. Bevatron scientists made experimental observations of the subatomic particles K mesons that contributed significantly to the theory of parity nonconservation for which Tsung-Dao Lee and Chen Ning Yang won the Nobel prize in physics in 1957. UCRL emulsion experimental groups contributed to Murray Gell-Mann's identification of strange particles. and UCRL physicists discovered a new elementary particle that confirmed Gell-Mann's theory of the Eightfold Way. Gell-Mann won the Nobel Prize in physics for his work in 1969.

From 1974 through 1993 the Bevalac, a hybrid facility that linked the Bevatron to a linear accelerator known as the SuperHILAC, was associated with important scientific research in the fields of nuclear medicine, nuclear physics and cosmic ray experiments. The Bevalac was the only laboratory in the country capable of simulating the high energy heavy ion component of cosmic rays; it played an important part in the NASA space program, in studies of the effects of cosmic radiation upon astronauts and their equipment. In 1974 the Bevalac was established as a national accelerator facility for biomedical heavy-ion research funded by the U.S. Energy Research and Development Administration. Biomedical programs included basic cancer research as well as patient therapy. After the Bevalac was upgraded in 1981 it was the only accelerator in the world capable of accelerating all the naturally occurring elements of the periodic table, from hydrogen to uranium.

National Register Criterion B

The Bevatron and Bevalac are associated with many significant persons under National Register Criterion B. "Criterion B applies to properties associated with individuals whose specific contributions to history can be identified and documented. Persons 'significant in our past' refers to individuals whose activities are demonstrably important within a local, State or national historic context" (National Register Bulletin 15:14). The people identified below all made significant scientific contributions to the fields of particle and nuclear physics at the Bevatron or Bevalac, which were national research laboratories.

Properties associated with living persons are not usually eligible for the National Register under Criterion B (National Register Bulletin 15:16). However Tom McCulloch, of the Advisory Council on Historic Preservation in Washington, D.C., advised the consultants that this restriction would not apply in the case of the Bevatron and Bevalac because of the exceptional importance of the facility (McCulloch 1993).

Under Criterion B, persons associated with an historic property must be "*individually* significant within a historic context. A property is not eligible if its only justification for significance is that it was owned or used by a person who is a member of an identifiable professional class, or social or ethnic group. It must be shown that the person gained importance within his or her profession or group...Properties eligible under Criterion B are usually those associated with a person's *productive* life, reflecting the time period when he or she achieved significance" (National Register Bulletin 15:15). All of the people discussed under Criterion B worked at the Bevatron or Bevalac during the productive period of their lives; many of them spent their entire careers in association with the Bevatron or Bevalac, as graduate students, junior scientists, and senior scientists and administrators. All of people cited in this discussion under Criterion B had distinguished careers in physics, chemistry, medicine or engineering, and all are cited for specific

achievements in association with the Bevatron or Bevalac during its period of significance from 1949 to 1993.

The following discussion classifies significant persons in two groups. In the first group are the Nobel Prize winning physicists whose work is associated with the Bevatron; the second group is comprised of the many scientists, engineers, and physicians who conducted important scientific work at the Bevatron and Bevalac, or who contributed significantly to the design and operation of the accelerator.

E.O. Lawrence and **Edwin McMillan** deserve a separate category of their own. Although their Nobel Prizes were not directly associated with the Bevatron or Bevalac, they played leading roles as laboratory directors in the creation of the facilities. Lawrence's invention of the cyclotron in 1929, and McMillan's idea of phase stability in 1945, were major scientific contributions that provided a foundation for development of the Bevatron.

All of the people on the following list are physicists unless otherwise noted. All of them were (and many still are) on the LBL staff. The Bevatron and Bevalac were international laboratories, drawing leading scientists from all over the world. But the list is already a long one, and a completely inclusive list would be overwhelming for the purposes of a National Register evaluation.

Nobel Prize Winners Directly Associated with the Bevatron

Emilio Segre and Owen Chamberlain won the Nobel Prize in 1959 for their discovery of the antiproton in an experiment at the Bevatron. This experiment is described briefly in the Historical Overview portion of the report.

Luis Alvarez won the Nobel Prize in 1968 for his development of the bubble chamber particle detector (originally invented by Donald Glaser) and for his role in finding 18 particle resonances with LBL bubble chambers used in conjunction with the Bevatron.

Other Significant Persons Directly Associated with the Bevatron/Bevalac

It is important to note that the following list is not necessarily exhaustive, and that other, equally qualified people may have inadvertently been omitted.

Jose Alonso: Nuclear physicist in Bevalac Biomedical Facility

Robert Birge: Experimental work with propane bubble chambers

William Brobeck: Engineer, Chief Designer of the Bevatron

Joseph Castro, M.D: In charge of clinical medical program at Bevalac

Bruce Cork: Member of team that discovered anti-neutron in 1956. Work both on machine and experiments from early period

Albert Ghiorso: Nuclear chemist at HILAC who first thought of Bevalac idea, and contributed to its early development

Gerson Goldhaber: Experimental work with nuclear emulsions

Donald Gow: Assisted Luis Alvarez in development of bubble chamber

Hermann Grunder: Helped plan Bevalac and was head of Accelerator Division at LBL after Edward Lofgren's retirement

Walter Hartsough: In charge of operations at Bevatron and Bevalac for many years

Glenn Lambertson: Member of team that discovered anti-neutron in 1956. Work both on machine and experiments from early period

Edward J. Lofgren: First director of Bevatron, leader of Bevalac development Director of Accelerator Division at LBL

Oreste Piccioni: Member of team that discovered anti-neutron in 1956

Wilson Powell: Experimental work with propane bubble chambers

Lynn Stevenson: Important member of Luis Alvarez' team in bubble chamber experiments.

Cornelius Tobias: Medical physicist involved in cancer therapy research at Bevalac

George Trilling: Experimental work with nuclear emulsions

William Wenzel: Member of team that discovered anti-neutron in 1956. Work both on machine and experiments from early period

Clyde Wiegand: Important member of the Segre /Chamberlain team that discovered anti-proton

<u>National Register Criterion C</u>

The Bevatron is eligible for the National Register under Criterion C both for the accelerator as a machine and for the building that housed the machine.

Bevatron and Bevalac Buildings

Under Criterion C, the Bevatron Building (Building 51), the Accelerator Design Building (Building 64), and the HILAC Building (Building 71), are contributing elements of the Bevalac district. Buildings 51 and 71 "embody the distinctive characteristics of a type" (National Register Bulletin 15: 17); both are distinguished examples of a rare international building type, the accelerator building. Building 64 is a representative example of a research laboratory building.

Accelerator buildings are characterized by the accommodation of accelerator magnets and machines, experiments, controls, and shielding; are realized through the modern approach to architectural design of industrial buildings; utilize modern structural systems and materials; and are built by national governments for advanced research in particle and nuclear physics by leading scientists and universities.

The Bevatron and HILAC possess these characteristics differently, for a proton synchrotron in the case of the Bevatron, and for a heavy ion linear accelerator in the case of the HILAC. In their own ways, each possesses the distinguishing characteristics of the type in a way that "can be expressed in terms such as form, proportion, structure, plan, style or materials" (National Register Bulletin 15:18). Each design is a reflection of the research process in forms, materials, structural systems, and plan. Magnet and accelerator rooms, craneways, experimental areas, mechanical and power rooms, and office and control rooms are reflected in the accretive forms and materials of the two buildings, both in their original designs and as they have been modified. Each of these buildings illustrates the patterns associated with all accelerator buildings, the individuality of their particular situation, and the evolution of the processes each was designed to accommodate (National Register Bulletin 15: 18).

As a district, the Bevatron and HILAC buildings linked together for the Bevalac, together with Building 64 as a support building, represent a unique and important effort among international accelerator facilities. While these parts represent the patterns associated with individual accelerator buildings, the district represents more powerfully the individuality of a complex and unique facility. Each building in the district is linked to the machines inside in a way that is inseparable from the machines. In this way the buildings are in effect part of the machines and their significance is inseparable from that of the machines.

Eligibility of the Bevatron and Bevalac must take into account Criteria Consideration G for "Properties that have achieved significance within the last fifty years" (National Register Bulletin 15: 41). Ordinarily, properties that have achieved significance within the past fifty years are not considered eligible for the National Register. However, under Criteria Consideration G "A property achieving significance within the past 50 years [can be eligible] if

it is of exceptional importance" (36 CFR 60.4). As is discussed more fully above, both buildings and machines meet this standard. The Bevatron and Bevalac were leading international centers of research in particle and nuclear physics during their period of significance, from 1949 to 1993.

The Bevatron and Bevalac possess integrity in most of its seven aspects as required for the National Register: location, design, setting, materials, workmanship, feeling, and association (National Register Bulletin 15: 44). The interior of Building 64 is undergoing remodeling at the time of this writing and suffers a broader loss of integrity; the degree of change is not known, but in the context of the entire Bevalac, appears to be minor. Since the end of the period of significance is February, 1993, when the Bevalac was closed, many pieces of equipment have been removed from the facility. This has compromised its integrity but has not resulted in a loss of integrity.

The buildings of the Bevatron and Bevalac possess a high degree of integrity of location, design, setting, materials, workmanship, and association. The many changes made to the buildings themselves were all made within the period of significance, and do not constitute a loss of integrity. The removal of equipment has compromised the integrity of feeling.

Bevatron as a Machine

The Bevatron as a machine is eligible under Criterion C for Design/Construction in Engineering. This criterion applies to properties significant for their physical design or construction, and can include engineering, as well as architectural elements (National Register Bulletin 15:17). The Bevatron was a proton synchrotron designed from 1946 to 1954 under the overall direction of UCRL director, E.O. Lawrence, with the participation of UCRL physicists including Edward Lofgren. The engineering design was developed by a UCRL team led by William M. Brobeck, one of the world's leading pioneers of accelerator design. In addition to the Bevatron, he had also been the main designer of the 184-inch synchrocyclotron at UCRL.

The Bevatron was the largest, highest-energy accelerator in the world when it opened in 1954, and is eligible under Criterion C as "representing the work of a master" (National Register Bulletin 15:17). The design and operation of the Bevatron are described in some detail in the Historical Overview portion of the report.

The significant components of the Bevatron included a magnet with a diameter of approximately 120 feet, accelerating electrodes, injectors, a control system and motor generators. Upgrades included a new injection system, external proton beam facilities, concrete shielding, movable targets, and improvements in controls.

All of these main components would be eligible for the National Register if they had survived. However, because of the salvage program now

underway at the Bevatron/Bevalac, much of the support equipment for the Bevatron has been removed, or is in the process of being removed.

The SuperHILAC, one of the two major components of the Bevalac (along with the Bevatron) is also eligible for the National Register under Criterion C for Design/Construction in Engineering. The SuperHILAC is eligible under Criterion C because it embodies the "distinctive characteristics of a type, period, or method of construction" (National Register Bulletin 15:17). The HILAC was one of the first of a type of accelerator developed in the late 1950's -- the heavy ion linear accelerator.

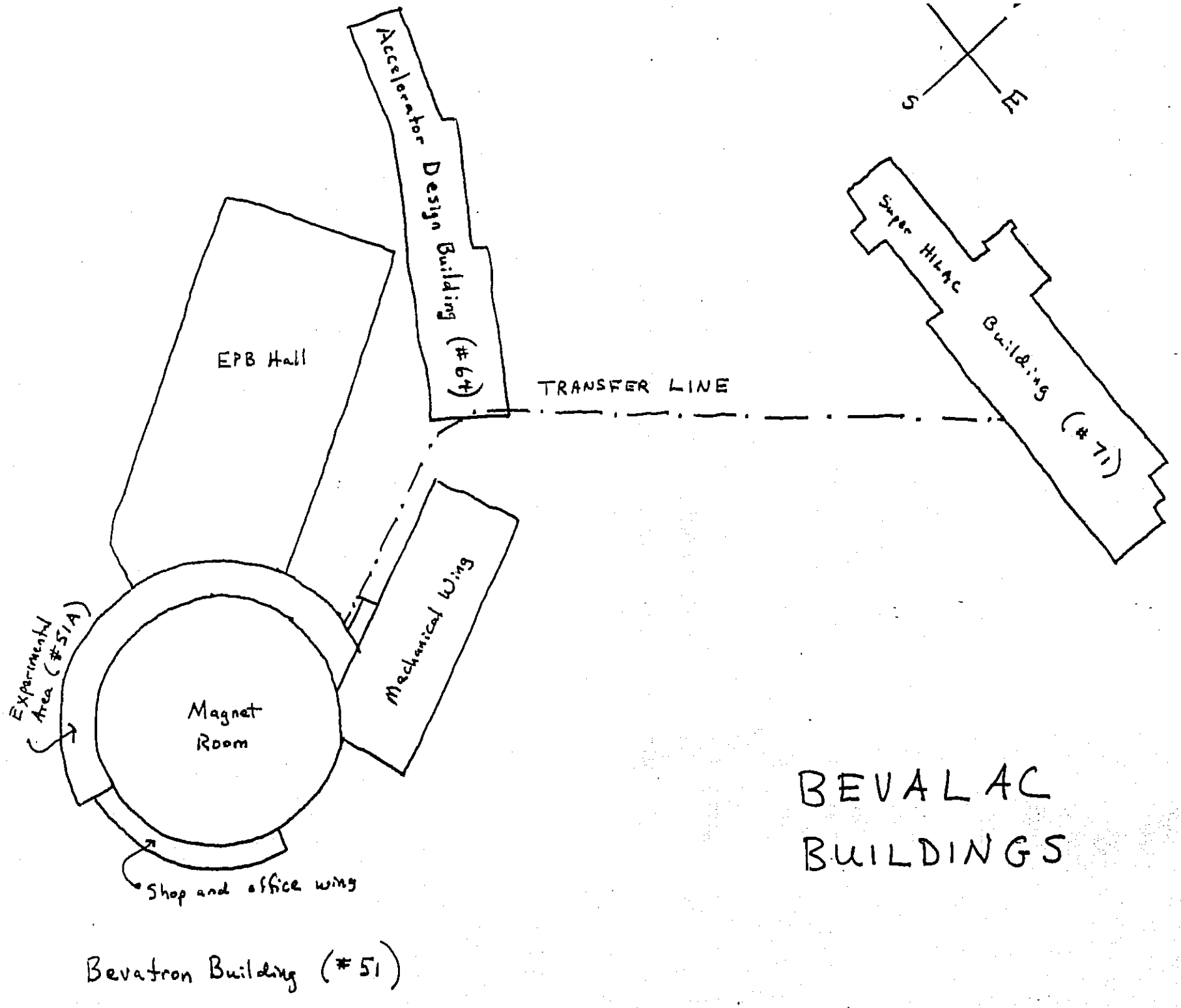
An earlier version of the SuperHILAC, the HILAC, or Heavy Ion Linear Accelerator, opened at the laboratory in 1957 to study heavy ions. The HILAC, and a sister machine at Yale University were the first accelerators built specifically for heavy ion research. The basic elements of the HILAC were a Cockroft-Walton generator and two Alvarez linacs separated by a narrow space. The upgrade of the HILAC to the SuperHILAC took place in 1971-1972.

The Bevatron and Bevalac as machines are eligible under Criterion C because in addition to their significance for design/construction in engineering they still retain integrity of location, design, setting, materials, workmanship, and association. All of the many upgrades of the machines over the years were made within the period of significance (1949-1993) and do not constitute a loss of integrity. The recent removal of equipment in the year since the facility was closed in February, 1993, has compromised the integrity of feeling.

In spite of the many upgrades of equipment that are inevitable in the life of a particle accelerator at a leading national research laboratory, it is important to note that in both the Bevatron and the Bevalac, much of the original structure remains intact. In the case of the Bevatron, the steel magnets, the copper coils and the cooling system are original, dating from 1954. In the SuperHILAC, both of the original linac injectors -- dubbed Adam and Eve, remain in the facility -- with the addition of the third injector, Abel, dating from 1981.

APPENDIX D

Sketch Map of Bevatron and Bevalac Buildings



BEVALAC BUILDINGS

Comment Letter LAW

L.A. Wood, January 9, 2006 (Comments Identified "LAW")

Response LAW – 1, 2, 3

Comments noted. Section 4.2.3, Cultural Resources, states that Building 51 was determined eligible for listing in the National Register of Historic Places (NRHP) and has been listed in the California Register of Historical Resources; see, e.g., page 33-34.

In 1997, in accordance with 36 CFR 800, as part of the National Historic Preservation Act (NHPA) Section 106 consultation process, a Memorandum of Agreement (MOA; Appendix C) was signed among DOE, the California State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) regarding the demolition of Building 51. The MOA stated that the demolition of the Bevatron Building/Building 51 and Building 51A Complex would affect a property eligible for inclusion on the National Register of Historic Places. The stipulations of the MOA required that the building be documented in accordance with the National Park Service's Historic American Engineering Record (HAER) requirements. In September 1997, LBNL staff prepared and submitted HAER documentation to the US Department of Interior National Park Service (NPS) in March 1998. The documentation included a written historical and architectural description of the building and accelerator, and extensive photographic recordation in accordance with the MOA stipulations (see Section 5.1.3, Cultural Resources, pages 66-67).

As stated in Section 5.1.3, Cultural Resources, page 67:

> "With the acceptance of the HAER report by NPS, DOE may demolish Building 51 provided that DOE contacts the Historic American Building Survey (HABS) division of NPS to determine what level and kind of recordation is required for the buildings, and that such documentation is completed and accepted by HABS prior to demolition. LBNL has consulted with NPS. The latter determined that an addendum to the HAER report would meet HABS requirements. The HAER addendum has been completed and was accepted by NPS in August 2006. For NEPA purposes, with the signed MOA, completion of the HAER documentation, and approval of the HABS addendum by NPS, LBNL has adequately mitigated for the potential loss of Building 51. As an additional measure, LBNL plans to commemorate the scientific achievements attributed to the Bevatron with a monument and/or display listing the historic discoveries that occurred there." (Section 5.1.3, page 67)

--------- Original Message --------
Subject:FW: Draft EA for demolition of Bevatron and Bldg. 51
Date: Thu, 22 Jun 2006 09:54:19 -0500
From: Schwab, Carl <Carl.Schwab@bso.science.doe.gov>
To: Joseph P Harkins <JPHarkins@lbl.gov>

FYI

-----Original Message-----
From: Richard C. Van Sluyters [mailto:rcvs@berkeley.edu]
Sent: Sunday, March 19, 2006 9:42 PM
To: Carl Schwab
Subject: Draft EA for demolition of Bevatron and Bldg. 51

Dear Mr. Schwab,

I have read the draft EA for the demolition of the Bevatron and Building
51. As an LBNL neighbor, I am impressed by the thoroughness and care with which the EA was drafted. I have no criticisms or suggestions for improvement. Good luck with this project. RC-1

-RCVS
--
Richard C. Van Sluyters
1511 Campus Drive
Berkeley, CA 94708-2042
Home: (510) 486-1503
Cell: (510) 367-7031

Richard C. Van Sluyters, March 19, 2006[8] (Comment Identified "RC-1")

Response RC-1

Commenter states his position on the thoroughness of the Draft EA. Comment noted.

8 Email date

ATTACHMENT # 8B

Comment Letter LWPS

Mr. Don Klima, Director
Advisory Council on Historic Preservation
1100 Pennsylvania Avenue, NW, Suite 809
Washington, D.C. 20004

March 19, 2006

Re: National Historic Preservation Act (NHPA), Section 106 review of case file DOE941104A and the Memorandum of Agreement (MOA) regarding the Demolition of the Bevatron and Building 51 at the Lawrence Berkeley National Laboratory, Berkeley, Alameda County, California, dated October 1997.

Dear Director Klima,

On March 17, 2006 we contacted your office expressing concern over the NHPA Section 106 process regarding the project referenced above. We now write to officially request that your office intervene on our behalf and investigate this urgent matter.

After speaking with the Office of Historic Preservation, California we forwarded a letter dated December 15, 2005 to the preservation officer Mr. Milford Wayne Donaldson. (See attachment 1.) In that correspondence we raised issue with the Memorandum of Agreement (MOA) and the fact that the Berkeley public was not included in the NHPA 106 process as consulting parties, prior to the finalization of the MOA in 1997. It appears also that your office never signed the 1997 MOA. (See attachment 2.)

Be advised that to date, Mr. Milford Wayne Donaldson, SHPO, has not responded to our letter. Moreover, DOE/LBNL has just released the National Environmental Policy Act (NEPA) documentation (Draft Environmental Assessment, EA) for the above referenced project that we believe is incomplete. Note, that the Historic American Building Survey (HABS) division of the National Park Service has not yet accepted the required addendum to the Historic American Engineering Record (HAER) report prepared for the Bevatron and Building 51. (p. 53) LBNL/DOE have refused to allow public access to this addendum, as well.

Again, we request your intervention in this matter because of the lack of response by Mr. Milford Wayne Donaldson and the Office of Historic Preservation. It is clear that the EA has not adequately addressed the Section 106 cultural resource issues of historical significance of the Bevatron. A full Environmental Impact Statement (EIS) should be required of the project.

Finally, the NHPA Section 106 process has not been completed so we ask that a new MOA be drafted with public participation.

Sincerely,

L A Wood
1803 Bonita Avenue
Berkeley, CA 94709-2117
email contact: la@berkeleycitizen.org

Pamela Sihvola
P. O. Box 9646
Berkeley, CA 94709
Committee To Minimize Toxic Waste

cc: Congresswoman Barbara Lee
Mr. Milford Wayne Donaldson, SHPO
F. J. Gofling, Chief Historian, Federal Preservation Officer, Department of Energy

L.A. Wood, Berkeley Environmental Commission and Pamela Sihvola, Committee to Minimize Toxic Waste, March 19, 2006 (Comments Identified as "LWPS")

Comment noted. While the comment does not directly address the accuracy or adequacy of the environmental analysis, for informational purposes, the DOE has completed the Section 106 National Historic Preservation Act process. Public notice of the Proposed Action, including the potential demolition of the Bevatron and the mitigation measures to reduce these effects, has been provided to all interested parties as part of the Environmental Assessment process under NEPA. As such, no further public notice under Section 106 or NEPA would be required.

The Advisory Council on Historic Preservation (ACHP) has found that DOE has met its responsibilities under Section 106 of the National Historic Preservation Act (please see Appendix H).

Community Health Commission

MAY 19, 2006

To: Honorable Mayor and Members of the City Council

From: Community Health Commission

Submitted by: Thomas Kelly, Commission Chair, Community Health Commission

Subject: Recommendations on the Draft Environmental Assessment (DEA) for the Demolition of Building 51 and the Bevatron

INTRODUCTION

The Community Health Commission (CHC) was asked by community members to comment on the potential health impacts to Berkeley residents and others of the proposed demolition of Building 51 and the Bevatron located at the Lawrence Berkeley National Laboratory (LBNL).

The CHC was also asked by the community to consider making a recommendation that the buildings be left intact to avoid or minimize the health risks associated with their demolition and the transportation of the materials to an appropriate waste site.

CURRENT SITUATION AND ITS EFFECTS

The University of California and the Lawrence Berkeley National Laboratory are completing the required administrative process prior to demolishing Building 51 and the Bevatron. Both the demolition of these buildings and the alternative – maintaining the structures in place – have potential health and environmental impacts.

BACKGROUND

A. The CHC's Environmental Health Subcommittee met on several occasions to review the Draft Environmental Assessment. The Subcommittee made several recommendations to the CHC that were based on the following observations:

1. The scope of the project described in the DEA dated March 21, 2006 is substantial:
   - It is possible that the demolition and removal of the structures could take as long as 6 ½ years (depending on the availability of funding). The DEA assumes that the project will be concluded in 4 years.
   - The amount of debris that will be removed is between 46,000 and 57,000 tons, half of which is considered hazardous waste (23,000 – 28,500 tons). According to the DEA, the hazardous debris is likely to be shipped to Clive, Utah, approximately 60 miles from Salt Lake City.

2180 Milvia Street, Berkeley, CA 94704 • Tel: (510) 981-7000 • TDD: (510) 981-6903 • Fax: (510) 981-7099
E-Mail: manager@ci.berkeley.ca.us Website: http://www.ci.berkeley.ca.us/manager

EAST BAY
MUNICIPAL UTILITY DISTRICT

April 10, 2006

Carl Schwab
U.S. Department of Energy, Berkeley Site Office
One Cyclotron Road, MS 90R1023
Berkeley, CA 94720

Dear Mr. Schwab:

Re: Draft Environmental Assessment – Building 51 and Bevatron Demolition, Berkeley

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Draft Environmental Assessment (EA) for the Building 51 and Bevatron Demolition at the Lawrence Berkeley National Laboratory (LBNL) located in the City of Berkeley. EBMUD has the following comments.

WATER SERVICE

EBMUD provides water service to the LBNL through the Shasta Pressure Zone, with a service elevation between 900 and 1,050 feet, and the Berkeley View Pressure Zone, with a service elevation between 1,050 and 1,250 feet. The LBNL site receives its water supply via a 12-inch meter in Campus Drive in the Shasta Pressure Zone and via a 6-inch meter in Summit Road from the Berkeley View Pressure Zone. As stated on page 82 bullet 6 of the Draft EA, since the proposed action would not result in an increase in long-term water demand but would maintain existing demand levels, than no new water facilities would be required as a result of the proposed demolition and demolition activities. EBMUD-1

WASTEWATER

The demolition of a building should not generate any wastewater flows to EBMUD's Main Wastewater Treatment Plant. The project sponsor should notify EBMUD if wastewater flows are anticipated from the project.

Page 70, paragraph 1 states "[the proposed project] would allow varying amounts of surface water to percolate into the ground rather than flow along the surface." While there may not be concern for increased wastewater flow, there is concern about a possible increase in Infiltration/ Inflow (I/I). The project should address the replacement or rehabilitation of the existing sanitary sewer collection system to prevent an increase in I/I. A provision to control or reduce the amount of I/I should be included in the EA. The main concern is the increase in total wet weather flows, which could have an adverse impact if the flows are greater than the maximum allowable flows from this subbasin. EBMUD-2

Recycled Paper

If there will be increased wastewater flows, even if it is expected to be only a temporary increase, the project sponsor needs to confirm with the City of Berkeley's Public Works Department that there is available capacity within the subbasin flow allocation and that it has not been allocated to other developments. The City of Berkeley's I/I Correction Program set a maximum allowable peak wastewater flow from each subbasin within the City and EBMUD agreed to design and construct wet weather conveyance and treatment facilities to accommodate these flows. EBMUD prohibits discharge of wastewater flows above the allocated peak flow for a subbasin because conveyance and treatment capacity for wet weather flows may be adversely impacted by flows above this agreed limit. The projected peak wet weather wastewater flows from this project needs to be determined to assess the available capacity within the subbasin and confirmation from the City should be included in the EA. Suggested language to include in the EA is as follows: "The City of Berkeley Public Works Department has confirmed that there is available wastewater capacity within Subbasin *(insert subbasin number here)* that is reserved for this project." EBMUD-2

If you have any questions, please contact David Rehnstrom, Senior Civil Engineer, Water Service Planning at (510) 287-1365.

Sincerely,

William R. Kirkpatrick
Manager of Water Distribution Planning

WRK:JAJ:sb
sb06_098.doc

East Bay Municipal Utility District, April 10, 2006 (Comments Identified as "EBMUD-1 and EBMUD-2")

Response EBMUD-1

Comment noted.

Response EBMUD-2

As stated in the EA, following demolition, the project site would be planted with native grasses, allowing for some potential increase in rainwater percolation, as noted in the comment. While the increase percolation could potentially result in a minor increase in infiltration/inflow to existing sanitary sewer lines, the project site is within the western portion of the Berkeley Lab site, where sanitary sewer flows are directed to City of Berkeley sub-basin 17-013. According to the recently completed EIR for Berkeley Lab's Long-Range Development Plan (LRDP), Sub-basin 17-013 is not currently constrained during peak wet weather flows, and it is expected to have future wet weather capacity to meet LBNL's growth needs during the term of the 2006 LRDP.

The commenter is requesting confirmation from the City of Berkeley that there is available wastewater capacity reserved for the project. This will not be included in the EA as the City of Berkeley has not confirmed this with LBNL in writing.

Comment Letter PS

UNIVERSITY OF CALIFORNIA, BERKELEY

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April 10 2006

Carl Schwab
U.S. Department of Energy
Berkeley Site Office
MS 90R 1023
One Cyclotron Road
Berkeley CA 94720

Dear Mr. Schwab:

It has come to my attention that the Bavatron in Building 51 is about to be dismantled. Considering the importance of this building to the history of science, I urge the Dept. of Energy to make sure that at least the core of the Bevatron will be preserved. PS-1

Sincerely,

Peter Selz
Professor Emeritus

Peter Selz, April 10, 2006 (Comment Identified as "PS-1")

Response PS-1

Preserving the Bevatron accelerator (the core) was considered in the Preservation Alternative, Section 3.2.2. As discussed in that section, this alternative would not achieve the objectives of the Proposed Action. Relocation of the Core for preservation was not considered because it would not be achievable: the 180'-diameter accelerator is far too heavy to be removed and would have to be destructively disassembled. Many of the massive core components were epoxied together and cannot be disassembled in a way that would preserve the core (i.e., it would have to be demolished for removal).

Comment Letter AC

Schwab, Carl

From: Chakos, Arrietta [AChakos@ci.berkeley.ca.us]

Sent: Tuesday, April 11, 2006 6:22 PM

To: Therese Powell (E-mail)

Cc: CESchwab@lbl.gov

Subject: Alert for you both on a City request coming to the LBNL staff for an extension of 30 days to comment on the Bevatron project Environmental Assessment

Terry Powell and Carl Schwab:

I am writing to alert that our City Council has asked the City Manager to request a comment period extension of 30 days on the Bevatron project environmental assessment.

Council members are concerned, after hearing from community members, that the assessment does not speak to some potential development a the LBNL site and that the comments are due on April 21, 2006 before the Council returns on April 25 from its spring recess. AC-1

We will get the letter out to LBNL in the next day or two.

Thanks,
Arrietta Chakos

Arrietta Chakos
Assistant City Manager
MLK, Jr. Civic Center Building
2180 Milvia Street, 5th Floor
City of Berkeley, California 94704
510-981-7000

Arrietta Chakos, Assistant City Manager, City of Berkeley, April 11, 2006 (Comment Identified as "AC-1")

Response AC-1

The draft environmental assessment was issued on March 21, 2006. A 30 day comment period was given, extending from March 21, 2006 to April 21, 2006. On April 18, 2006, DOE extended the comment period for another 30 days, from April 22, 2006 to May 22, 2006. In June 2006, the project was put on hold for approximately one year due to funding considerations.

Comment Letter JH

CITY OF BERKELEY
Planning and Development Department
Land Use Planning Division

RECEIVED 4-18-06

April 12, 2006

Terry Powell
Community Relations Officer
Lawrence Berkeley National Laboratory
1 Cyclotron Road Mail Stop 65
Berkeley, CA 94720

Dear Ms. Powell:

This letter is to inform you that at the April 6, 2006 meeting, the Landmarks Preservation Commission initiated the Cyclotron and Building 51 at the Lawrence Berkeley National Laboratory for consideration as a City of Berkeley Landmark or Structure of Merit. In addition, the Landmarks Preservation Commission will conduct a public hearing on this designation proposal at the May 4, 2006 meeting. You will receive a notice informing you of the public hearing in late April. JH-1

If this property is designated a City of Berkeley landmark or structure of merit, it is because the Landmarks Preservation Commission wishes to honor the property by recognizing its architectural and historical significance and its contribution to the urban character of Berkeley.

Please call me at (510) 981-7484 or jhomrighausen@ci.berkeley.ca.us if you have any questions regarding this initiation proposal. Thank you.

Sincerely,

Janet Homrighausen

Janet Homrighausen
Senior Planner

Cc LPC

2120 Milvia Street, Berkeley, CA 94704 Tel: 510-705-8111 TDD: 510-644-6915 Fax: 510-883-6543
E-mail: planning@ci.berkeley.ca.us

Janet Homrighausen, Senior Planner, City of Berkeley, April 12, 2006 (Comments Identified as "JH-1")

Response JH-1

Comment noted. The Landmarks Preservation Commission designated the Building 51/Bevatron site as a City of Berkeley Historical Landmark, without indicating any "features to be preserved," on August 3, 2006. On appeal, the City Council upheld the Landmarks Preservation Commission's decision on January 30, 2007.

CITY OF BERKELEY

Office of the City Manager

April 12, 2006

Dr. Steven Chu, Director
Lawrence Berkeley National Laboratory
One Cyclotron Road, Mail Stop 5230
Berkeley, CA 94720

Carl Schwab
U.S. Department of Energy
Berkeley Site Office
MS 90-1023
One Cyclotron Road
Berkeley, CA 94720

Re: Request for Extension of Public Comment Period on Draft Environmental Assessment for Demolition of LBNL Building 51/Bevatron

Dear Dr. Chu and Mr. Schwab:

I am writing, on behalf of the Berkeley City Council, to request that you extend the public comment period on the Draft Environmental Assessment (EA) for the demolition of Building 51 and the Bevatron at the Lawrence Berkeley National Laboratory (LBNL) to May 22, 2006 to allow the community and the City Council adequate time to provide input on the proposed project. PK-1

The City Council voted in 2003 to support decommissioning, deconstruction, and removal of the Bevatron. The Council's support was predicated on a process that was acceptable to the public, required preparation of an Environmental Impact Report (EIR) in compliance with State law, and included development of a long-term plan for future use of the site. Although LBNL did prepare an EIR, we have a number of concerns about the adequacy of that document. We were, in particular, troubled by the EIR's reliance on the EIR that UC Berkeley prepared for the 2020 Long Range Development Plan and its flawed analysis of the project's cumulative impacts on hydrology and water quality, traffic, and public facilities. I have attached a copy of that letter and request that it be included in the official record for the Draft EA. PK-2

Based on our preliminary review, the Draft Environmental Assessment does not allay our concerns about the adequacy of the CEQA document as a basis for analyzing and mitigating the impacts of the proposed demolition project. Because of the nature of the project, "construction period" impacts will be far more significant than its long-term effects. For this reason, it is critically important that the Environmental Assessment focus on the four to seven-year period when the demolition work will occur. The Assessment should also pay PK-3

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E-mail: manager@ci.berkeley.ca.us

special attention to projects on the eastern side of the Campus, including the proposed improvements to California Memorial Stadium and the proposed parking structure at Maxwell Family Field. Because of the amount of excavation required for the garage and the Stadium's Student Athletic Facility, both of these projects will generate an extraordinary amount of truck traffic that will be traveling along Gayley Road and Hearst Street, the same route trucks from the LBNL demolition project will use. The cumulative impact of the LBNL demolition project and other construction work in this vicinity will significantly exacerbate traffic and circulation problems in this part of the City and could severely impede the City's ability to provide emergency and public safety services to those who live and work in the area. PK-4

We ask you to postpone action on the assessment and extend the public comment period to May 22, 2006, to provide additional time for the City and members of the public to review the document. This will allow for a thorough scrutiny of the assessment continued good faith with our community. PK-5

We request your thoughtful consideration of this request and look forward to a favorable response.

Sincerely,

Phil Kamlarz
City Manager

cc: Honorable Mayor and Members of the City Council
City Clerk

Attachment

Phil Kamlarz, City Manager, City of Berkeley, April 12, 2006 (Comments Identified as "PK-1 through PK-5")

Response PK-1

The comment period on the Draft EA was extended to provide additional time to review and comment on the document. Please see Response AC-1.

Response PK-2

The Bevatron Final EIR included responses to the City of Berkeley's comments on the Draft EIR. The Final EIR was certified on July 19, 2007. The City's comment letter on the Draft EIR is hereby included in the official record for both the EIR and the EA.

Response PK-3

The Bevatron Final EIR was certified on July 19, 2007. The challenge period on the EIR has expired. The EA makes clear the timeframe under which any demolition impacts would occur. Please see Section 5, Environmental Consequences.

Response PK-4

Cumulative impacts of the Proposed Action on traffic and circulation were fully assessed in the EA. In addition, both projects mentioned by the commenter were considered as part of the cumulative impact analysis. Please see pages 100-101 of the EA.

Response PK-5

As stated above, the comment period on the Draft EA was extended. Please see response AC-1.

From: J M Sharp [mailto:itsa@dnai.com]
Sent: Saturday, May 20, 2006 12:20 PM
To: Carl Schwab
Subject: bevdem comments

Mr Schwab, a hardcopy is in the mail. Meanwhile, here's an electronic version.

J

D Thompson / J Sharp - 2663 Le Conte Avenue Berkeley CA 94709 - 510/644-9344

21 April 2006

Mr Carl Schwab
US Department of Energy
Berkeley Site Office
One Cyclotron Road MS 90R1023
Berkeley CA 94720

Re: Building 51 and Bevatron Demolition DEA

Dear Mr Schwab:

We strongly feel that DOE/EA-1541--*Draft Environmental Assessment (DEA) for Demolition of Building 51 and the Bevatron*--released 21 March 2006, is a premature document. DT-1

For three reasons, we think the *DEA* should be withdrawn and re-circulated *after* the Lawrence Berkeley National Laboratory (LBNL) releases its new Long Range Development Plan (LRDP), first announced in a Notice of Preparation over five (!) years ago. DT-2

1. The Bevatron Demolition project involves the removal and transportation of a significant volume of hazardous and radioactive materials. It will involve thousands of truck trips along heavily populated City of Berkeley streets over a four-to-seven year period, if we can believe the estimates.

2. Though it is not articulated in the *DEA,* demolition of the Bevatron and Building 51 looks to us like the first stage of new major construction on that site. Indeed, LBNL now appears poised to enter the *hotel business* with the planned construction of a three-story, 25,000 gsf "Guest House" less than 500 feet from Building 51 (*DEA,* p 87). DT-3

3. Because of the project's hazardous nature and long time horizon, we believe it is in the best interest of both the Department of Energy and the University of California to tier the project off a fresh LRDP with the most up-to-date mitigations possible. In our judgment, DT-4

it is not reasonable for a project which may not be completed until 2013 (and likely followed by another long construction period) to use a twice-amended 1987 LRDP as its framework. DT-4 cont.

Please withdraw the *DEA* and re-circulate it after the new LRDP is available.

Sincerely,

Daniella Thompson James M Sharp

Daniella Thompson and James Sharp, April 21, 2006[9] (Comments Identified as "DT-1 through DT-4")

Response DT-1

Please see Response GB-1.

Response DT-2

Please see Response GB-1.

Although NEPA documentation is not required for a University of California LRDP, LBNL believes that the currently applicable 1987 LRDP provides sufficient guidance for the Proposed Action. In addition, the analysis of the Environmental Assessment is consistent with the 2006 LRDP EIR, which was certified on July 19, 2007.

Risks from the transport of waste materials that would be generated by the Proposed Action are addressed in Section 5.1.5, Hazards and Human Health (see pages 68-71), and Section 5.1.10, Traffic and Circulation (see pages 79-84).

Response DT-3

Comment noted. As stated in Chapter 3, Description of Proposed Action and Alternatives, while development of the Building 51 site is likely at some point in the future, at this time, there are no firm plans for future development that have reached the level of a proposed or reasonably foreseeable action.

The commenter is correct in noting the planned construction of a Berkeley Lab Guest House; however, the Guest House will not be located on the Building 51 site. As stated in Chapter 5 of the EA, Berkeley Lab is in the planning stage for the construction and operation of a new Guest House to serve visiting scientists, faculty and students. Many of the visitors using the Lab's facilities—the Advanced Light Source, National Center for Electron Microscopy, 88" Cyclotron, and the Molecular Foundry—are from outside the Bay Area and must obtain short-term housing. The Guest House would be a 25,000 gsf, three-story facility with approximately 60 guest rooms and would provide on-site, low-cost, short-term housing. The site designated for the Guest House is near the center of the Laboratory, west and southwest of Building 2 and on the site of the demolished Building 29 and Trailer 29D, and existing Trailers 29A, 29B, and 29C. An Initial Study/Negative Declaration was prepared and circulated in early 2007. If approved, construction activities would occur over a 17 month period, forecast at this time to occur between 2008 and 2009.

Response DT-4

See response DT-2.

9 Email date

Comment Letter HF

Schwab, Carl

From: Hank Field [hfield@uclink.berkeley.edu]
Sent: Tuesday, April 25, 2006 11:54 AM
To: CESchwab@lbl.gov
Subject: Bldg. 51 Demolition Comment

Dear Mr. Schwab,

HF-1

Please ensure that the project will have stormwater pollution prevention controls in place so that the North Fork of Strawberry Creek and downstream reaches will not be impacted by potential pollutants. Potential pollutants or impacts include but are not limited to:

HF-2

Concrete dust-suppression water run-off
Soil sediment run-off due to erosion or mud-tracking.
Oil from machinery maintenance or broken hydraulic lines Debris bin run-off Increased run-off intensity to the creek if impervious space will be increased as a result of the project.

If you have any questions or would like to discuss my comments, please contact me.

Sincerely,

Hank

--

Hank Field
Environmental Specialist
University of California, Berkeley
Office of Environment, Health and Safety University Hall, 3rd Floor Berkeley, CA 94720-1150

(510) 642-0359 ph.
(510) 643-7595 fax
hfield@berkeley.edu

Schwab, Carl

From: Steve Maranzana [stevemar@berkeley.edu]
Sent: Tuesday, April 25, 2006 5:09 PM
To: CESchwab@lbl.gov
Cc: Hank Field; Greg Haet; Karl Hans; Steve Maranzana; Tim Pine; PAThorson@lbl.gov
Subject: Re: Bldg. 51 Demolition Comment

Dear Mr. Schwab,

Hank Field is out the office for the next couple days but he wanted me to add "broken water supply lines" to the list of potential pollutant sources to consider. HF-3

Thank you,
Steve

At 11:53 AM -0700 4/25/06, Hank Field wrote:
>Dear Mr. Schwab,
>
>Please ensure that the project will have stormwater pollution
>prevention controls in place so that the North Fork of Strawberry Creek
>and downstream reaches will not be impacted by potential pollutants.
>Potential pollutants or impacts include but are not limited to:
>
>Concrete dust-suppression water run-off Soil sediment run-off due to
>erosion or mud-tracking.
>Oil from machinery maintenance or broken hydraulic lines Debris bin
>run-off Increased run-off intensity to the creek if impervious space
>will be increased as a result of the project.
>
>If you have any questions or would like to discuss my comments, please
>contact me.
>
>Sincerely,
>
>Hank
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>--
>_____
>_____
>
>Hank Field
>Environmental Specialist
>University of California, Berkeley
>Office of Environment, Health and Safety University Hall, 3rd Floor
>Berkeley, CA 94720-1150
>
>(510) 642-0359 ph.
>(510) 643-7595 fax
>hfield@berkeley.edu

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~~~~~~
Steve Maranzana, EH&S Specialist
UC Berkeley - Office of Environment, Health & Safety Environmental Protection
317 University Hall
Berkeley, CA 94720-1150
(510) 642-6568 (voice)
(510) 643-7595 (FAX)
web site: http://www.ehs.berkeley.edu
~~~~~~

Hank Field, Environmental Specialist, UC Berkeley Office of Environment, Health and Safety, April 25, 2006[10] (Comments Identified as "HF-1 through HF-3")

Response HF-1

As described in Section 5.1.6, Hydrology and Water Quality, pages 71-74, the Proposed Action, being greater than one acre, will require coverage under the statewide General Construction Permit, and various protective mechanisms (i.e., developing and implementing a project-specific Stormwater Pollution Prevention Plan which specifies Best Management Practices (BMPs) that will prevent all construction pollutants, including dirt and silt from erosion and sedimentation, from contacting storm water and entering receiving waters) will be put in place. Sampling is not required as part of this permit, since this site does not discharge into impacted waters.

The specific details of the demolition process and the most effective BMPs for controlling surface runoff, preventing erosion, and maintaining adequate drainage at the Building 51 site will be developed by LBNL staff and contractors in project-specific SWPPPs as the specifics of the demolition activities are further defined. As required by the statewide General Construction Permit, the preparation and implementation of SWPPPs will ensure that pollutants would not enter the environment through uncontrolled runoff. On-going groundwater monitoring would not be disturbed.

Stormwater runoff from the proposed site is currently discharged to the North Fork of Strawberry Creek. Because the Proposed Action would cause stormwater runoff on the subject site either to be slightly reduced or to remain the same as under existing conditions, the impact on runoff rates and volumes discharged to the North Fork of Strawberry Creek would be negligible (see Section 5.1.6, pages 71-74).

Response HF-2

Section 5.1.6 of this Environmental Assessment states that the Proposed Action would require the management of water generated from dust suppression activities, rainfall, and, because of the seasonally shallow groundwater, excavation dewatering. Management of the surface water is necessary to avoid entrainment of pollutants such as asbestos, lead, and silica in concrete dust. Also, construction equipment used on-site may release small quantities of petroleum products including diesel, gasoline, and grease that could be combined in the wastewater. The Proposed Action would also involve the management of some materials that have induced or surface radioactivity (see Section 5.1.5, Hazards and Human Health)

Quantitative descriptions of water quality conditions, including results from the Lab's stormwater monitoring and surface water programs, are presented in LBNL's annual Site Environmental Report. Recent reports are available on the web at http://www.lbl.gov/ehs/esg/ tableforreports/tableforreports.htm. The Laboratory is not required to and does not monitor the Building 51 area individually, as the Lab's stormwater permit covers the entire Lab. Data from Lab outfalls includes the Building 51 area.

[10] Email Date

Response HF-3

LBNL maintenance technicians are on duty 24 hours a day and are trained to respond to any utility emergency such as a broken water main. They are trained (and have an operating procedure) to isolate the broken pipe and quickly set up dechlorination treatment that neutralizes any chlorine in the supply water prior to it reaching any downstream storm drain inlet.

Schwab, Carl

From: PhoeBe ANNE [phoebeso@earthlink.net]
Sent: Thursday, May 04, 2006 11:29 AM
To: JHomrighausen@ci.berkeley.ca.us; CESchwab@lbl.gov
Subject: to the Landmarks Preserv. Commission

Dear Landmarks Preservation Commissioners:
May 1, 2006

The Berkeley Fellowship of Unitarian Universalists' Social Justice Committee has voted to request that you landmark the Bevatron building.
It should be listed on the National Register of Historic Places because important research was done there, which resulted in four Nobel prizes. We like the idea of an "adaptive reuse alternative" with the site used to teach living history. Thank you for considering this creative option.

PBA-1

Sincerely,

PhoeBe ANNE (sorgen), co-chair
Berkeley Fellowship of Unitarian Universalists' Social Justice Committee
1606 Bonita Ave.
Berkeley, CA 94709

PhoeBe ANNE (sorgen), Co-chair, Berkeley Fellowship of Unitarian Universalists' Social Justice Committee, May 1, 2006 (Comment Identified "PBA-1")

Response PBA-1

As described in Section 3.2.4, Description of Proposed Action and Alternatives, the Adaptive Reuse alternative was considered but rejected as infeasible: it would not avoid the significant impacts to historic resources associated with the Proposed Action and it would be more costly, in terms of building and safety code compliance. The building does not meet modern fire/life safety regulatory codes or seismic requirements, and to upgrade it with fire proofing, fire separations, and structural enhancements would prove to be cost prohibitive.

Planning and Development Department
Land Use Planning Division

Carl Schwab
U.S. Department of Energy
Berkeley Site Office
1 Cyclotron Road, MS 90R1023
Berkeley, CA 94720

May 5, 2006

Dear Mr. Schwab,

The City of Berkeley Landmarks Preservation Commission (LPC) is responsible for the preservation and protection of Berkeley's cultural and historic landmarks. Please find enclosed comments from the LPC regarding the Draft Environmental Assessment for the demolition of the Bevatron and Building 51 at Lawrence Berkeley National Laboratory.

Please contact me at (510) 981-7484 or jhomrighausen@ci.berkeley.ca.us if you have any questions.

Sincerely,

Janet Homrighausen

Janet Homrighausen
Secretary, Landmarks Preservation Commission

Cc:
Terry Powell
Officer, Community Relations
One Cyclotron Road, MS 65A0101
Berkeley, CA 94720

2120 Milvia Street, Berkeley, CA 94704 Tel: 510.981.7410 TDD: 510.981.6903 Fax: 510.981.7420
E-mail: planning@ci.berkeley.ca.us

Carl Schwab
U.S. Department of Energy
Berkeley Site Office
1 Cyclotron Road, MS 90R1023
Berkeley, CA 94720

May 4, 2006

Subject: Comments on the Demolition of Building 51 and the Bevatron Draft Environmental Assessment (DOE/EA-1541).

Dear Mr. Schwab,

Thank you for the opportunity to comment on the Demolition of Building 51 and the Bevatron Draft Environmental Assessment (DEA), dated March 21, 2006. The City of Berkeley Landmarks Preservation Commission (LPC) has reviewed the document with respect to cultural resources and has the following comments:

- 40 CFR §1508.9 states that an Environmental Assessment (EA), as prepared by the federal agency, serves to 1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact, 2) Aid an agency's compliance with the Act when no environmental impact statement is necessary, and 3) Facilitate preparation of a statement when one is necessary. LBNL does not cite any of these as reasons for the preparation of this DEA (see last paragraph of Preface). LBNL needs to clearly state its position as to whether an environmental impact statement will be prepared or a finding of no significant impact will be made, based upon the findings presented in the EA. Because the proposed project is a demolition of a structure eligible for the National Register, a significant impact in itself, the LPC believes that an environmental impact statement (EIS) must be prepared. LPC-1

- The draft EA references Lawrence Berkeley National Laboratory's (LBNL) Long Range Development Plan (LRDP) of 1987 as the current planning document. However, the DEA states that a new LRDP is expected to be released in 2006. The LPC questions the appropriateness of referencing an 18-year old document and believes the issuance of this DEA and a subsequent draft environmental impact statement (DEIS) may be premature. The updated LRDP will result in the best assessment of the goals and objectives of this project, in the context of the LBNL's most current evaluation of its future needs, its planned projects, and its overall scientific mission. By working with the outdated LRDP, LBNL is unable to reasonably anticipate future actions that, in combination with the proposed project, may result in cumulative or indirect impacts. An updated LDRP can also best inform potential project alternatives. LPC-2

- The Memorandum of Agreement among the Department of Energy, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation regarding the demolition of the Bevatron Building was signed in 1997, over eight years before the draft environmental compliance documents were made available for public review. All parties should consider new public and agency comment and new documentation that arises during the environmental review process to ensure that the federal government's final decision is based on all the relevant factors. LPC-3

- The adaptive reuse alternative was dismissed as infeasible in the DEA without any real analysis. An adaptive reuse alternative should be analyzed in the EIS with the rigorous detail that will be afforded other alternatives. Alternatives should be evaluated and compared using the same type and detail of information. LPC-4

Given the LPC's recent review of the Draft Environmental Impact Report (DEIR) prepared under CEQA, the LPC offers the following suggestions for preparation of the draft Environmental Impact Statement (DEIS) under NEPA:

- The environmental impact statement should fully discuss the National Register Criteria under which Building 51 and the Bevatron are eligible for listing. Although applications to the National Register often focus on one of the eligibility criteria, the DEIS should discuss all criteria that effectively contribute to the eligibility of Building 51 and the Bevatron for the Register. This will aid in determining potential adaptive reuse projects and appropriate mitigations for any loss of integrity. LPC-5

- The environmental impact statement should discuss the findings of the Historic American Building Survey (HABS) report and the Dobkins and Corbett *Historic Architectural Evaluation Report*, and the architectural importance of Building 51 and the Bevatron from a historical perspective. The EIS should also provide information on the architectural firm of Masten and Hurd and the architect Milton T. Pflueger, a discussion of the architects' significance, and the importance of the Bevatron within the architects' body of work. LPC-6

- With respect to cumulative impacts, the EIS should include discussion and comparison of the existing particle accelerators of similar size in terms of architectural design. The EIS should also discuss and compare historic status and existing protections for the other particle accelerators of similar size. LPC-7

This concludes the LPC comments on the DEA.

As you may already be aware, Building 51 and the Bevatron were recently initiated by citizen petition for designation as a City of Berkeley landmark. (The LPC earlier withdrew, without prejudice, its initiation of Building 51 and the Bevatron.) We will keep you informed as to the outcome of the LPC proceedings. LPC-8

Again, the LPC appreciates the opportunity to comment on the draft EA.

Sincerely,

City of Berkeley Landmarks Preservation Commission

City of Berkeley Landmarks Preservation Commission, May 4, 2006 (Comments Identified as "LPC-1 through LPC-8")

Response LPC – 1

The commenter is correct regarding the Bevatron's eligibility for the National Register. Building 51 and the Bevatron were determined eligible for listing in the National Register of Historic Places (NRHP) and have been listed in the California Register of Historical Resources. Under NEPA, LBNL has adequately mitigated for the potential loss of Building 51 with a signed Memorandum of Agreement (MOA), completion of the National Park Service's Historic American Engineering Record (HAER) documentation, and approval of the Historic American Building Survey (HABS) addendum by NPS. As an additional measure, LBNL plans to commemorate the scientific achievements attributed to the Bevatron with a monument and/or display listing the historic discoveries that occurred there. For NEPA purposes, because DOE has mitigated potential impacts to cultural resources by complying with the terms of the MOA, the demolition of Building 51 and the Bevatron is not a significant impact. Therefore, it is not expected that preparation of an environmental impact statement (EIS) will be necessary, and pending issuance of a Finding of No Significant Impact, an EA is the appropriate document.

Response LPC – 2

Please see responses GB-1 and DT-2.

Response LPC – 3

The Memorandum of Agreement (MOA; Appendix C) was signed in 1997 among DOE, the California SHPO, and the ACHP regarding the demolition of Building 51. The stipulations of the MOA required that the building be documented in accordance with the National Park Service's Historic American Engineering Record (HAER) requirements. In September 1997, LBNL staff prepared the HAER documentation which included a written historical and architectural description of the building and accelerator, and extensive photographic recordation in accordance with the MOA's stipulations. The HAER documentation was submitted to and accepted by the US Department of Interior National Park Service (NPS) in March 1998.

With the acceptance of the HAER report by NPS, DOE may demolish Building 51 provided that DOE contacts the Historic American Building Survey (HABS) division of NPS to determine what level and kind of recordation is required for the buildings, and that such documentation is completed and accepted by HABS prior to demolition. LBNL has consulted with NPS. The latter determined that an addendum to the HAER report would meet HABS requirements. The HAER addendum has been completed and was accepted by NPS in August 2006. For NEPA purposes, with the signed MOA, completion of the HAER documentation, and approval of the HABS addendum by NPS, LBNL has adequately mitigated for the potential loss of Building 51.

Although the MOA was signed eight years prior to the Draft environmental document and federal decision, no new impacts have been identified since publication of the Draft EA. In addition, the Advisory Council on Historic Preservation (ACHP) sent a letter in September 2007 (included as

Appendix H) stating that "DOE has met its responsibilities under Section 106 of the National Historic Preservation Act for this undertaking."

Response LPC – 4

The Adaptive Reuse alternative was considered but rejected as infeasible because it would not avoid the potential impacts to historic resources associated with the Proposed Action, it would be much more costly than the Proposed Action, and it would not meet project objectives.

Response LPC – 5

According to the California State Office of Historic Preservation, Building 51/51A is eligible for inclusion on the National Register of Historic Places under Criteria A and B, with Criterion Consideration G.

Response LPC – 6

The EA identified Building 51 and the Bevatron as an historic resource under National and State criteria. Because the Lab has satisfied NEPA requirements in mitigating the impact to this historic resource, no information about the architectural firm of Masten and Hurd is required beyond what was provided in the EA.

The following information about Masten and Hurd is taken from the landmark application for Building 51 and the Bevatron, City of Berkeley, Landmarks Preservation Commission, and is included for informational purposes. Charles F. Masten designed Kezar Stadium in 1922. He and Lester W. Hurd began their partnership in 1924, becoming well known for institutional buildings. After WW II, they specialized in large-scale institutional projects, such as Hastings College of Law in San Francisco and Warren Hall at UC Berkeley. Later, in collaboration with Ernest J. Kump & Associates, they designed three community colleges: Foothill College in Los Altos, Cabrillo College in Santa Cruz and De Anza College in Cupertino.

Response LPC – 7

The EA included extensive cumulative impact discussion comparing existing particle accelerators of similar size in terms of architectural design, as well as historic status of these particle accelerators. Please see Section 5.4.2, Cumulative Impacts, Cultural Resources, pages 95-97.

Response LPC – 8

Comment noted. The Lab acknowledges the Landmarks Preservation Commission decision, designating the Building 51/Bevatron site as a City of Berkeley Historical Landmark, without indicating any "features to be preserved," on August 3, 2006. On appeal, the City Council upheld the Landmarks Preservation Commission's decision on January 30, 2007.

ATTACHMENT #4A,B
(4 PAGES AND 4 NEWS-CLIPPINGS)

Comment Letter EHS

To: The Community Health Commission
From: The Environmental Health Subcommittee
Date: May 11, 2006
Re: Recommendations from the Environmental Health Subcommittee to the Community Health Commission on the Draft Environmental Assessment (DEA) for Demolition of Building 51 and the Bevatron

The Community Health Commission (CHC) has been asked by community members to comment on the potential health impacts to Berkeley residents and others of the proposed demolition of Building 51 and the Bevatron located at the Lawrence Berkeley National Laboratory (LBNL).

We have also been asked by the community to consider making a recommendation to the full CHC that the buildings be left intact to avoid or minimize the health risks associated with their demolition and the transport of materials.

Commissioner Kahn has reviewed the section of the Draft Environmental Impact Report (DEIR) issued earlier this year by LBNL that discusses the Air Quality issues described in the DEIR. His memorandum is attached.

A. I have reviewed the DEA and wish to offer the following observations for your consideration.

1. The project described in the DEA is substantial:
   - It is possible that the demolition and removal of the structures could take as long as 6 ½ years (depending on the availability of funding). The DEA assumes that the project will be concluded in 4 years.
   - The amount of debris that will be removed is between 46,000 and 57,000 tons, half of which is considered hazardous waste (23,000 – 28,500 tons). According to the DEA, the hazardous debris is likely to be shipped to Clive, Utah, approximately 60 miles from Salt Lake City.
   - Approximately 4,700 truck trips will occur during this demolition. A single route (Hearst – Shattuck – University Ave.) for the round-trips will be used. During that period, it is possible that major construction will take place at the Ashby interchange at I-80. It raises the question as to whether any similar construction is anticipated

EHS-1

Other construction that is planned or on-going at LBNL, UC Berkeley, and the City of Berkeley (DEA, pp 86-89) are described, but their impacts are not aggregated.

2. The DEA states that the "future use of the site is speculative, it is not described in this Environmental Assessment, nor are the impacts of such use evaluated" (DEA, p. 7), however, the 2006 LBNL Long Range Development Plan (LRDP) and its accompanying LRDP EIR will be circulated later this year for review and may described a possible future use for the site (DEA, p. 7)

EHS-2

3. The DEA acknowledges that the demolition activities are subject to Federal and State regulation. Federal regulations, especially over the past 6 years, have been consistently

EHS-3

relaxed and frequently unenforced. Not surprisingly, the community may not feel confident that reliance on federal regulation will do much to ensure that their health is protected.

The City of Berkeley has recently passed a Precautionary Principle Ordinance which requires that the City, when confronted with an issue that might cause harm, consider taking no action, or at least a response likely to cause the least harm.

B. The Environmental Health Subcommittee makes the following recommendations to the Community Health Commission. Approved recommendations will be forwarded to the City Council for inclusion in its response to the Draft Environmental Assessment for Demolition of Building 51 and the Bevatron:

1. Request that plans for the demolition not be finalized until the public has the opportunity to review and comment on LBNL's Long Range Development Plan due out later this year. EHS-4
2. Establish air monitoring equipment along the travel routes that can be accessed in real time by the community. Elements to monitor include criteria pollutants (the federal Clean Air Act, and the EPA identify and set standards to protect human health and welfare for six pollutants: ozone, carbon monoxide, particulate matter (PM10), sulfur dioxide, lead, and nitrogen oxide) as well as PM2.5 and asbestos. Doing so will assure the community that they are not being exposed to harmful contaminants and can also be used by researchers looking at air quality issues. Water quality and noise levels should be similarly monitored and reported. EHS-5
3. Determine if CalTrans plans any major work on the I-80 between Powell and Buchanan Streets over the next 7 years that might exacerbate the projected traffic and air quality conditions. EHS-6
4. Request assurance that, should the demolition go forward, it be concluded in four years or less reducing the impacts on the neighborhoods close to the demolition site and reducing the possibility that the unfinished demolition will increase exposures to hazardous materials. EHS-7
5. Should the demolition go forward, all trucks that are used for the transportation of rubble should be spot checked for safety and its diesel fuel for adherence to the latest regulations. EHS-8
6. There has been some community opposition to the Clive, Utah waste disposal site by people living in the area. Berkeley should let the Clive community know of the proposed disposal of hazardous material and be certain that we are not shipping hazardous waste to a community that is opposed to it. EHS-9

Air Quality and the Demolition of the Bevatron

Extensive discussion of the above topic has been made available by UC Berkeley in a Drafi EIR (Environmental Impact Report) in a sixteen page document. I have read it over several times, and find it very difficult to summarize in a few sentences.

There are, however, a number of points to be made.

1. The demolition of Building 51 will require removal of the waste material resulting from the demolition by Diesel powered truck transport, through the City of Berkeley, over major thoroughfares, over an estimated time period of at least fours years or more. EHS-10

2. In addition to the potential pollution of the ambient air in Berkeley, both at the demolition site as well as in the vicinity of the truck route, by asbestos particles, particulate matter of various sizes, and chemical pollutants of a wide variety, a major consideration is also tailpipe pollution from Diesel powered trucks. Indeed, the EIR appears to regard this as a more important source of pollution than that of the material carried in the trucks. Furthermore, it is well known that carbon monoxide is a deadly gas produced by automotive exhaust. CO poisons the Hemoglobin carrying of Oxygen to the tissues. EHS-11

3. Insofar as measurement of the impact of the demolition process and truck transport is concerned, current facilities for potential measurement of air quality are totally inadequate. **The nearest air pollution measuring facility is the Alice Street Facility, in Oakland, six miles south of the project.** Ozone and carbon monoxide are the primary pollutants measured there. However, **the nearest specific particulate measuring facility is in Fremont, 30 miles southeast of the project site!** EHS-12

4. Insofar as demolition site protection is concerned, the sides of the building will not be demolished until all the material inside the building has been removed as a protective measure. Although a variety of "mitigation measures" are proposed by the Berkeley Lab, including frequent wetting down of the demolition site, protection of the aggregate material on trucks by a six-inch freeboard or covering of the cargo, **there is no plan to measure the impact of the entire process by any new special monitoring facilities!** EHS-13

5. The drafi document discusses at great length the various Federal and State Rules and Regulations, including, of course those of the EPA. There are apparently none existent for the City of Berkeley. The fact that the San Francisco Bay Area Basin, as I interpret the EIR, is a non-attainment area at least for ozone, is a source of concern. The Laboratory evidently plans to keep well within those regulations. EHS-14

6. Particulate matter, which is classified in two different sizes, appears to be a major hazard of Diesel tailpipe exhaust. Inhalation of these particles is potentially injurious to humans, especially those with chronic lung and cardiac disorders. I need not emphasize the dangers of inhaled asbestos as a potential carcinogen. EHS-15

7. It would appear to me, as a resident of Berkeley, that the demolition project should be very carefully reviewed by the City Council, that an impartial expert in industrial Toxicology be consulted by the Council for third party advice in order to minimize the potential dangers this Demolition project might impact on our citizenry, as well as recommendations for careful monitoring of ambient air in the vicinity of the truck route. EHS-16

8. It is not clear to me from the EIR whether there is any possibility of pollution by radioactive material, either at the demolition site or along the truck route. EHS-17

Environmental Health Subcommittee to the Community Health Commission, City of Berkeley, May 11, 2006 (Comments Identified "EHS-1 through EHS-17")

Response EHS-1

Comment noted. As stated in this Environmental Assessment on page 1, the duration of the physical work may vary from four to seven years, although a variant of the project could reduce the minimum duration of the project from four years to three and a half years. Please see Appendix G.

Specific disposal sites for the Proposed Action have not yet been selected. The EA states "any items showing detectable DOE-added radioactivity would be sent to an approved disposal site, *such as* Envirocare in Clive, Utah" (Section 3.1.4, Proposed Action Activities, page 19).

For a discussion of traffic related to the Proposed Action, see Section 5.1.10, Traffic and Circulation (pages 79-84).

Response EHS-2

As stated in response GB-1**,** the LRDP EIR was certified on July 19, 2007. NEPA documentation is not required for a University of California LRDP. The commenter quotes language from this Environmental Assessment, page 9, which also states that "Project-level NEPA and CEQA environmental analysis will be conducted if and when necessary for any future development at the Building 51 site."

Response EHS-3

Respondent states position concerning confidence in reliance on federal regulation. Comment noted.

Response EHS-4

Comment noted. Please see responses DT-1 and DT-2.

Response EHS-5

The EA presents substantial evidence that air impacts from the Proposed Action, including diesel emissions, would be minimal; see Section 5.1.1, Air Quality, on pages 87-61. Based on the findings of the EA Air Quality analysis, the Proposed Action presents no significant Air Quality impacts. Therefore, no additional monitoring is deemed necessary and is outside the scope of the Proposed Action.

For a discussion of the Proposed Action's impact on water quality, see Section 5.1.6, Hydrology and Water Quality, pages 71-74 of the EA. See also responses HF-1 and HF-2 above.

Noise levels are described in Section 5.1.7 of the EA, pages 74-76. As indicated in **Table 3** of the EA (Section 5.1.7, page 75), the noise levels associated with the loudest phase of demolition

would not be audible at most adjacent sensitive receptor locations, and would not exceed applicable weekday noise limits set by the Berkeley Noise Ordinance.[11] Weekend truck loading and departure activities would generate noise levels that would not exceed Berkeley's weekend noise standard at any sensitive receptor sites. At the same time, on-site receptors, such as occupants of LBNL buildings adjacent to the Building 51 site, would experience temporary noise increases during demolition. Although such receptors are not generally considered noise-sensitive, implementation of mitigation measures identified in the 1987 LRDP EIR, as amended, would lessen noise impact to a negligible level (see Appendix A). Moreover, as part of project contract specifications, LBNL would require its subcontractors to employ specific noise control procedures.

Truck traffic associated with the hauling of materials to and from the site could potentially elevate noise levels along haul routes for the duration of demolition activities. The Proposed Action would result in a maximum of 34 daily one-way truck trips. Trucks would be directed to routes on roads and freeways that are already heavily traveled. Therefore, given the limited number of project trips and the volume of existing traffic on the affected roadways, the general increases in noise levels along haul routes would not be perceptible.

While the Proposed Action is consistent with the City of Berkeley's Noise Ordinance, the additional measures incorporated as part of the project would assure that the project would not expose sensitive receptors to excessive noise levels.

Response EHS-6

Based on currently available information, CalTrans has no major work planned on the I-80 between Powell and Buchanan Streets over the next 7 years.

Response EHS-7

Comment noted. As stated in the EA, Section 3.1.4, Project Activities, page 17, the schedule for the project has been estimated to last 4 to 7 years…"contingent upon funding and results of material sampling." Materials disposition will be based on on-site sampling, the results of which will not be known until the Proposed Action is underway. Therefore, a more definitive schedule can not be determined in advance.

As stated on page 1, a variant of the project could reduce the minimum duration of the project from four years to three and a half years, but this reduction in schedule would have no resulting effect on project impacts, including traffic impacts. See also revised page 80 and Appendix G.

[11] If demolition work were to occur on weekends, associated noise levels would exceed Berkeley's weekend noise standard (City of Berkeley, 2005) at Site 4 and at the wall at Site 6. At Site 4, the combination of background and demolition noise would result in a noise level of up to 57 dBA, which represents an approximately 3-dBA increase over background noise. A 3-dBA change is considered a just-perceivable difference in noise level. Therefore, this increase in noise level would result in a negligible impact. The majority of LHS activities occur away from the wall at Site 6, in areas where there is no line-of-sight to the Building 51 area (a partial line-of-sight is available at the wall, as well as at the north parking area). Given that most LHS visitors would remain in the area behind this wall and that LHS itself is well behind this wall, LHS activities and visitors would not be exposed to demolition noise levels in excess of the weekend standard.

Response EHS-8

Comment noted. There are numerous U.S. Department of Transportation (DOT) regulations concerning the dispersion of hazardous and radioactive constituents during transportation, including requirements to verify that removable radioactive contamination is below specified limits. In addition, DOE Orders specify requirements which govern the release of materials with DOE-added radioactivity; these orders are generally much more stringent than DOT requirements for both surface and volumetric radioactive contamination. As with all aspects of transportation, LBNL will comply with all applicable regulatory requirements.

The plastic tarps that would cover many truck loads are not intended to provide the primary protection against fugitive dust emissions. As stated on page 83, "In general, due to the absence of hazardous characteristics, the DOT non-regulated materials that would be shipped off-site as a result of the Proposed Action would not require sealed containers. Items would have been vacuumed or otherwise cleaned prior to shipment, and the trucks would not release radioactive or hazardous dust products. However, some items likely would be shipped in sealed containers because of certain physical characteristics (e.g., small items that otherwise would be difficult to hold down or surface contaminated objects that may contain dispersible radioactivity)."

Regarding diesel fuel adherence, the EA presents substantial evidence that air impacts from the Proposed Action, including diesel emissions, would be negligible; see Section 5.1.1, Air Quality, at pages 57-61. See page 29 for a detailed discussion on the revised diesel requirements. In brief, under California Air Resources Board regulations (13 California Code of Regulations section 2281), diesel-fueled trucks and equipment in California have been required to use ultra-low sulfur fuel (15 parts per million [ppm] of sulfur). Thus, ultra-low sulfur fuel would be used for trucks and most off-road engines during the entire life of the Proposed Action. Current CARB diesel regulations can be found at: http://www.arb.ca.gov/fuels/diesel/081404dslregs.pdf.

Response EHS-9

Comment noted. See response EHS-1 above. As part of its standard operating procedures, LBNL consults with landfills prior to the start of demolition activities to ensure that there is sufficient capacity to accept the amount of waste generated by such projects, and has done so for the Proposed Action. No problems are anticipated in disposing of the various types of waste that would be generated, as stated in Section 5.1.9, Public Utilities, page 77.

Response EHS-10

Comment noted. Section 5.1.5, Hazards and Human Health (pages 68-71), and Section 5.1.10, Traffic and Circulation (pages 79-84) addresses risks from the transport of waste materials that would be generated by the Proposed Action.

Response EHS-11

The EA presents substantial evidence that air impacts from the Proposed Action, including diesel emissions, would be negligible; see Section 5.1.1, Air Quality, at pages 57-61.

Response EHS-12

Comment noted. See response EHS-11.

Response EHS-13

Comment noted. See responses EHS-11 and EHS-12.

Response EHS-14

Comment noted.

Response EHS-15

Section 5.1.1, Air Quality, pages 57-61, discusses particulate matter and asbestos with regard to the Proposed Action.

Response EHS-16

Comment noted.

Response EHS-17

Section 5.1.5 of the EA, Hazards and Human Health (pages 68-71), describes any radioactive material arising from the Proposed Action, both on site and along truck routes. The potential hazard to persons living along the truck routes, as well as LBNL employees, contractors and the general public would be far below regulatory limits and any standards of significance.

Materials that LBNL has reason to suspect might contain radioactivity would be characterized according to DOE-approved protocols and disposed appropriately, as described above. Due to the low levels of radioactivity present in the concrete that would be subjected to jackhammering or otherwise broken up, as well as the protective measures (e.g., applying water for dust suppression), it is expected that no detectable radioactivity would be contained in the dust generated by the Proposed Action.

The Proposed Action would include off-site disposal of items containing low levels of radiological activity. The low levels of such activity, coupled with the employment of appropriate safety measures in accordance with LBNL operational procedures (e.g., as set in LBNL PUB-3000; LBNL, 2005c), would ensure that any exposure resulting from the shipment of these items to LBNL employees and contractors (e.g., truck drivers), and to the general public (e.g., pedestrians, or passengers in a car idling in traffic next to a truck containing such items), would be far below applicable regulatory limits.[12]

[12] For transport workers, the applicable DOT regulatory limit is 2 mrem per hour. (49 CFR 173.441(b)(4)). For LBNL employees, the annual occupational exposure to general employees at DOE facilities such as the Laboratory is not to exceed a total effective dose equivalent of 5 rem (1 rem = 1,000 mrem) (10 CFR 835.202(a)(1)). Lesser annual exposure limits are set for employees who are pregnant women (500 mrem to the embryo/fetus from the period of conception to birth), and for minors who are occupationally exposed to radiation and/or radioactive materials

As a result of the above factors, the potential impacts of hazardous materials, hazardous waste, and other hazards discussed in this section would be reduced to negligible levels.

(100 mrem) (10 CFR 835.206, 207). The LBNL Radiation Protection Program, which implements 10 CFR 835 at the Laboratory, also sets two administrative levels that can be exceeded only with the approval of relevant authorities:

- A Department of Energy Administrative Control Level for workers of 2 rem whole body exposure per year per person is established for all DOE activities. Approval by the DOE Program Secretarial Official or designee is required prior to allowing a person to exceed this level.
- LBNL itself has set an Administrative Control Level of 1 rem per year for whole body exposure. Approval by the Deputy Laboratory Director is required prior to allowing a person to exceed this level.

The exposure of members of the public to radiation sources as a consequence of all routine DOE activities shall not cause, in a year, an effective dose equivalent greater than 100 mrem (DOE Order 5400.5). This standard includes exposure to both airborne radionuclides and penetrating radiation. As mentioned earlier in the text, EPA established a limit of 10 mrem/year for airborne emissions for the general public (40 CFR 61).

Comment Letter K

CITY OF BERKELEY

Office of the City Manager

May 22, 2006

Mr. Carl Schwab
U.S. Department of Energy, Berkeley Site Office
MS 90R 1023
One Cyclontron Road
Berkeley, CA 94720

Dear Mr. Schwab:

Thank you for providing an extended public comment period to respond to the Draft Environmental Assessment (DEA) for the demolition of the Bevatron and Building 51 at Lawrence Berkeley National Laboratory (LBNL). The City of Berkeley sent the attached comments on the Draft Environmental Impact Report (DEIR) for the same project to LBNL on December 5, 2005. LBNL has not yet issued a Final EIR that responds to the City's comments about the DEIR's inadequacies, nor does the DEA respond to the significant concerns raised.

The purpose of preparing an Environmental Assessment is to determine whether an Environmental Impact Statement (EIS) is necessary and, if so, to facilitate its preparation. Given the lack of response to the issues the City raised about the DEIR, we have no evidence that the project will not have a significant impact on the environment and must, therefore, conclude that the project would require preparation of an EIS per NEPA. K-1

The City is particularly concerned that the Department of Energy has failed to make the Historic American Engineering Record (HAER) addendum available for public review. Without such documentation, neither the City nor the public can comment on the adequacy of the documentation that is proposed to mitigate the loss of a structure deemed eligible for listing on the National Register. K-2

Please refer to the attached letter for more detail about the areas where the City believes more information is needed prior to a determination of whether an EA or an EIS is the appropriate level of environmental review. Thank you for your consideration of these comments.

Sincerely,

Phil Kamlarz
City Manager

Cc: The Honorable Mayor and Members of the City Council
Dan Marks, Planning and Development Director; Wendy Cosin, Deputy Planning Director
Maneula Albuquerque, City Attorney
Arrietta Chakos, Assistant City Manager

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Office of the City Manager

December 7, 2005

Mr. Daniel Kevin
LBNL NEPA/CEQA Program
Lawrence Berkeley National Laboratory, 90K0198
One Cyclotron Road
Berkeley, CA 94720

Re: Comments on Draft Environmental Impact Report for Demolition of LBNL Building 51/Bevatron

Dear Mr. Kevin:

This letter is the City of Berkeley's response to the Draft Environmental Impact Report (EIR) for the demolition of Building 51 and the Bevatron at the Lawrence Berkeley National Laboratory (LBNL).

On March 11, 2003, the Berkeley City Council supported decommissioning, deconstruction, and removal of the Bevatron in a manner acceptable to the public, requested that an EIR be prepared, and requested that LBNL develop a long-term plan for future uses for the site. The City is pleased that LBNL agreed with our conclusion that a full EIR would be needed to analyze the potential significant environmental impacts of this project. We have some concerns, however, about the adequacy of the Draft EIR that LBNL issued on October 21, 2005.

The DEIR is "tiered" off three Environmental Impact Reports prepared between 1987 and 1997 that comprise the EIR for the LBNL's 1987 Long Range Development Plan (LRDP) as amended. The DEIR states that it relies on the 1987 EIR in several areas including environmental setting, overall growth-related issues, long-term cumulative impacts, and mitigation measures applicable to this project. The CEQA Guidelines (Sec. 15168 (d)) specify the circumstances under which a previously certified EIR can be incorporated by reference to deal with these and other factors. Because of significant impacts associated with implementation of the UC Berkeley 2020 Long Range Development Plan, which UC approved after adoption of the amended 1987 LRDP for LBNL, the current project's cumulative impacts on hydrology and water quality, traffic, and public facilities are of special concern.

The cumulative impact analysis includes consideration of the gross impacts associated with implementation of the UC Berkeley 2020 LRDP, but fails to include more specific project-level information that has become available during the past year. The specific impacts of several of these critical projects will be the subject of the upcoming Southeast Campus Integrated Projects (SCIP) EIR. Even though the SCIP DEIR will not be complete until sometime next year, it is clear that UC already has considerable information available about the timing, location, and magnitude of these projects. The Bevatron DEIR must include this information when evaluating the project's cumulative impacts.

In particular, we believe that the DEIR is seriously flawed because the cumulative impacts analysis

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specifically excludes the UC Berkeley Memorial Stadium Upgrade Project. The DEIR explains away this omission with the statement that "no detailed information about this project is available". This is not correct. Consultants to the University of California (the Lead Agency for both the Building 51/Bevatron Project and the Memorial Stadium upgrade) have been working on plans for the Stadium for at least a year. On November 10, Chancellor Robert Birgeneau announced highlights of a master plan for the Stadium that begins with construction of a new 132,500 square-foot student athletic center adjacent to the west wall of the Stadium as well as a new law and business building on the west side of Gayley Road. Construction of the first phase of the stadium plan — the student athlete high-performance center — is scheduled to begin in December 2006, pending environmental review and approval by the UC Board of Regents, in order to be ready for the 2008 football season. This means that the Stadium construction would likely coincide with the LBNL Building 51/Bevatron project.

The Council previously requested that LBNL develop a long-term plan for future uses of the site. According to LBNL Staff, the DEIR for the new LBNL Long Range Development Plan will not be available until 2006. If demolition of Bevatron were delayed to allow the new Long Range Development Plan to specify future uses for the property, the DEIR would have to also analyze such future uses. However, two of the stated objectives of the demolition project (eliminate potential hazards associated with the building, reduce the burden on LBNL maintenance resources - DEIR, p. III-2) support moving ahead at this time.

While the City supports timely removal of hazardous materials and does not recommend that the demolition be delayed until LBNL can prepare a new LRDP, we believe that the project should not go forward until the DEIR is revised to include additional information about the project's effects. To ensure that LBNL carries out the proposed activities "in a manner acceptable to the public" as the Council requested in 2003, the DEIR should be revised to respond to concerns that Staff and members of the public have identified including the following:

1. The City understands that because LBNL is a Federal facility, project approval requires compliance with both State (CEQA) and Federal (NEPA) environmental review requirements. We are aware that the Federal Department of Energy (DOE) is preparing an Environmental Assessment (EA) for the project in compliance with the National Environmental Policy Act (NEPA). The Department of Energy expects to issue the Draft EA later this year. It will have a 30-day review and comment period. The DEIR does not indicate whether the LBNL Director, to whom the Board of Regents has delegated authority for certifying this EIR and approving the project, can approve the project before the NEPA environmental assessment is completed and approved by the Department of Energy. Moreover, the DEIR does not explain why LBNL and DOE did not prepare a single environmental document intended to meet both State and Federal requirements as the CEQA Guidelines (Section 15220 et. seq.) suggest. Aside from avoiding a time-consuming duplicative review process, it seems prudent for the CEQA document to incorporate any information included in the NEPA environmental document. On the other hand, if the NEPA assessment document does not include any new information there is no apparent reason for delaying its release or for preparing a single environmental review document as the Guidelines suggest.

2. The transportation analysis in the DEIR is flawed because of reliance on inappropriate thresholds for determining which traffic impacts will be significant. The DEIR presents nine criteria for identifying significant impacts to the transportation system, two of which refer to roadway or

intersection capacity. The other five criteria are important but are not considered in this discussion.

Under the Bevatron DEIR, a traffic impact becomes significant when it causes levels of service at an intersection to degrade below LOS D; or causes an increase in total volume of greater than 5 percent at an intersection operating at LOS E or worse. On roadway segments designated in the Congestion Management Plan, the impact is not considered significant unless the projected peak hour volume would increase by at least 5 percent regardless of whether the segment is projected to exceed the CMP standard without the project (p IV.K-7). The DEIR states that the 5 percent threshold is based on the fact that day-to-day traffic volumes can fluctuate by as much as 10 percent and, therefore, the average motorist is unlikely to perceive a 5 percent variation. Whether the average motorist will notice an increase in traffic is not an appropriate criterion for determining whether an impact is significant. Various references to this threshold, such as those on page IV.K-11 are, therefore, misleading and irrelevant.

3. On page IV.K-5, the DEIR lists 22 intersections that UCB 2020 LRDP EIR evaluated and concludes, "All of these intersections operate at an acceptable LOS D or better during both the a.m. and p.m. peak hours, except [two]." The DEIR needs to provide more information about the project's traffic impacts on the 20 intersections that are projected to operate at an acceptable LOS without the project to determine whether the project will degrade operations to worse than LOS D at any of these intersections and, if it will, what measures will be taken to mitigate any significant impacts.

   Similarly, the cumulative analysis needs to provide additional technical documentation. Using the same list of intersections from the UCB 2020 LRDP EIR, the discussion of Cumulative Impacts (p. IV.K-16), concludes that all but three of the 22 intersections listed "would continue to operate at acceptable levels of service (LOS D or better) during the a.m. and p.m. peak hours...". This is a vague statement, and no documentation is provided to document the impacts on levels of service. Moreover, as noted above, the DEIR did not consider the additional impact of traffic that will be generated by work on the Memorial Stadium.

   The DEIR's analysis of cumulative impacts needs to focus on the four to seven-year period when LBNL will carry out the Bevatron demolition including assessing impacts on levels of service and proposing mitigations for any intersections that would exceed the DEIR's significance criterion. The DEIR acknowledges that the intersections at University Avenue/San Pablo Avenue, University Avenue/Sixth Street, and Gayley Road/Stadium Rim Way are already operating at LOS F and that the project in combination with planned, pending, or other reasonably foreseeable projects, including implementation of the UC Berkeley 2020 Long Range Development Plan and construction of the Tien Center would further degrade conditions. As indicated above, to simply say "[t]he project-generated trips would add negligible traffic to long-term cumulative conditions", suggesting that the traffic increases would not be noticeable to the average motorist, is not an acceptable technical explanation.

   In regard to the Gayley Road at Stadium Rim Way intersection, "where delays within LOS F would increase", we recognize that project traffic at this intersection should not include large trucks, because the truck route is clearly defined elsewhere. However, because the DEIR does identify this intersection, it needs to assess the project's impacts in a technical and complete manner.

Although the intersection of Gayley Road and Stadium Rim Way (Rim Road) is within the UC campus, the DEIR needs to assess the effect that traffic operations at this location would have on other locations in the City. For instance, will the queuing for northbound Gayley extend back to affect the City street intersection of Piedmont at Bancroft? Will congestion on Rim Road result in traffic taking alternate routes through residential neighborhoods south of the Stadium such as Panoramic, Prospect, Channing Way and other streets? Combined with the impact of construction at the Memorial Stadium, the project's cumulative impacts on the Gayley-Rim Road intersection could have spillover effects on intersections along the Piedmont-Warring corridor in addition to an adverse impact on the residential neighborhoods south of the campus.

4. The DEIR acknowledges that the proposed project would have a significant unavoidable impact on a historical resource as defined by the CEQA Guidelines. An addendum to the existing Historic American Engineering Record (HAER) to document the site's historic significance has been prepared for the Historic American Building Survey (HABS) and is being reviewed, but this information is not included in the DEIR or otherwise available for public review. Even though such documentation cannot reduce the impact of the proposed demolition of an historic resource to less than significant levels, the LBNL should make all of this documentation available for public review prior certification of the EIR. In addition to preparing a written and photographic record, LBNL should identify other ways to recognize the site's significance.

5. The DEIR concludes that the project individually and together with other proposed LBNL and UC Berkeley projects would have no impact or a less than significant impact on hydrology and water quality. This conclusion is based, in part, on information that the impacts of implementing the UC Berkeley 2020 Long Range Development Plan will have less than significant impacts on the Strawberry Creek watershed. The DEIR also relies on continuing implementation of best management practices (BMPs) and other measures from the LBNL's facility-wide Storm Water Pollution Prevention Plan (SWPPP) and Storm Water Management Plan (SWMP). Enforcement of these plans and implementation of the required BMPs would be the responsibility of LBNL monitors who would be on-site during all demolition operations to ensure that contractors comply with the stormwater/wastewater management plans (p. IV.G-11)

   As noted below, the DEIR does not include information showing how well these measures have mitigated water quality impacts to date. Moreover, aside from the information provided in the discussion of hazards and hazardous materials (Chapter IV), the DEIR does not include a quantitative description of existing water quality conditions. Since the project will continue for some years, the only way to ensure the efficacy of BMPs is to take runoff samples before the project commences and as it goes forward to evaluate the effectiveness of stormwater pollution prevention measures and make adjustments as needed. Sampling and analyses should be for sediment content as well as known pollutants such as lead, oil and grease, asbestos, etc. Annual reports should be made available for public review as well as to the Regional Water Quality Control Board.

6. The DEIR indicates that electrical and low sulfur diesel power will be used on site for equipment associated with demolition. The City recommends that "ultra-low sulfur" be used, not low sulfur.

7. The DEIR states that project will generate about 34 one-way truck trips per day and 4,700 one-way truck trips over the 4 to 7 years it will take to complete the job. These will be heavy trucks including flatbed and soil-haul trucks. About 5 percent may be overweight, the rest within "normal truck weight limits." The DEIR concludes that, even when considered together with other construction projects, the impact on City streets will be less than significant, and that no mitigation is required. The DEIR states that no damage to roadways is expected "beyond that which would be considered normal wear and tear" because the City's designated truck routes are designed and constructed to sustain regular use by heavy trucks.

   The DEIR includes a mitigation measure stating that UC will reimburse the City for its fair share of costs associated with damage to City streets from University construction activities "provided that the City adopts a policy for such reimbursements applicable to all development projects within Berkeley". The DEIR is correct that the City does not at this time have a specific program for recouping the cost of damage to city streets from construction projects. The City does, however, require private applicants to pay for improvements as a condition of approving projects that are subject to discretionary review under the Municipal Code. The fact that UC is not subject to the City's land use regulations, does not, however, eliminate its responsibility for mitigating the significant environmental impacts of its projects pursuant to the California Environmental Quality Act. Therefore, the DEIR should include a mitigation measure to reimburse the City for damage to streets that will occur as a result of up to seven years of on-going heavy truck traffic. The specifics of the mitigation should be negotiated with the City prior to release of the FEIR.

8. According to the DEIR, about a third of the shielding blocks and other items will have detectable radioactivity above the DOE limit and, therefore, will need to be sent to an approved disposal site, probably in Utah or Nevada. The DEIR states that about half of the truck trips would carry some type of hazardous waste, including low-level radioactive waste. The shipments with the highest levels of radioactivity would be two or three shipments of depleted uranium (p. IV.F-22-23). The DEIR provides information about the potential hazard posed to workers involved in transport and to members of the general public (e.g. pedestrians or passengers in cars along the route) but does not provide information about the potential hazard to those who live along truck routes. Also, even though the DEIR includes data on accident potential on routes within the City, it doesn't discuss potential hazards during transport once the trucks reach Interstate 80. This information is particularly important because of the congested conditions on I-80. The DEIR should also include information about the capacity of the receiving sites.

9. The DEIR states that the 4,700 flatbed and dirt-haul trucks required to transport materials to and from the site would be diesel-powered, and that the exposure to the public of diesel particulate matter emissions would be greater than on-site exposure during demolition because the trucks would pass within approximately 30 feet of residences.

   While Bay Area Air Quality Management District (BAAQMD) considers construction-related impacts to be less than significant if required dust-control measures are implemented, the proposed number of diesel-powered truck trips that will be routed though the City is extremely high. In addition, there are significant adverse public health impacts from particulate matter beyond those modeled for cancer risk. Since the science is not yet available to calculate the additional asthma attacks or death of sickly or elderly people along the transportation corridor, it would be prudent to take protective measures, similar to the ones identified for on-site diesel

smoke generating activities. The DEIR should propose a mitigation measure that requires all haulers to use only ultra-low sulfur or biodiesel for the trips to and from LBNL.

10. The DEIR relies on a number of mitigation measures from the amended 1987 LRDP EIR but does not include information to show that these measures have successfully mitigated the impacts they were intended to reduce. Such information should be available from the CEQA-mandated monitoring that LBNL is required to conduct.

11. The DEIR incorporates a mitigation measure from the 1987 LRDP EIR regarding preparation of an annual self-assessment that summarizes environment, health, and safety program activities, and identifies any areas where LBNL is not in compliance with laws and regulations governing hazardous materials, hazardous waste, hazardous materials transportation, regulated building components, worker safety, emergency response, and remediation activities. Without oversight from the City or another outside agency and in the absence of State regulators, it is questionable whether such analysis would be as vigilant as the City and its residents desire. Given the impacts identified in the DEIR, the City recommends that a mitigation measure be added that LBNL provide regular reports during the Bevatron demolition project. Ideally, the reports would be posted on LBNL's web site and sent to all regulatory agencies and the City for information.

12. The DEIR provides little information about how the site will be used between completion of the demolition project and approval of a longer-term plan for development. It states that future development would have to be consistent with the 1987 LBNL LRDP as amended or the pending 2006 LBNL LRDP. At a minimum, the DEIR should indicate what use of the roughly four acre site would be consistent with the 1987 LBNL LRDP, which will be applicable to LBNL until such time it is amended or replaced. The DEIR suggests that about 2.25 acres would not be used for any purpose while the remaining area would be used for parking and staging. It is not clear whether these uses would cease following demolition or if the remaining area of about 1.75 acres would be used for parking for LBNL employees and/or visitors. It should be noted that at the Scoping Meeting it was stated that the 2.25 acres would be returned to open space use. The DEIR needs to provide more information about possible near-term uses of the property and assess any potential environmental impacts. This is particularly important if LBNL intends to use the site for parking.

Please contact Wendy Cosin, Deputy Planning Director, if you have any questions. She can be reached at 981-7402 or wcosin@ci.berkeley.ca.us. Thank you again for the opportunity to comment.

Sincerely,

Phil Kamlarz
City Manager

cc: The Honorable Mayor and Members of the City Council
Dan Marks, Planning and Development Director
Manuela Albuquerque, City Attorney
Arrietta Chakos, Assistant City Manager

Phil Kamlarz, City Manager, City of Berkeley, May 22, 2006 (Comments Identified as "K-1 and K-2")

Response K-1

The EA is being used to evaluate the significance of the impacts of the proposed project and determine if a FONSI can be issued or an EIS will be required. Additional time has been taken to complete the EA, in part, to incorporate and analyze information about potential new projects, such as the Berkeley Lab Guest House and the UCB Southeast Campus Integrated Projects (SCIP), which became available after the issuance of the Draft of this EA. The CEQA FEIR has also incorporated and analyzed this new information, and has provided the responses requested by the commenter.

Response K-2

The Historic American Engineering Record (HAER) report has been placed in the Main Branch of the Berkeley Public Library. The Historic American Building Survey (HABS) addendum to the HAER report has been completed and was accepted by NPS in August 2006 (please see Appendix I). For NEPA purposes, with the signed MOA, completion of the HAER documentation, and approval of the HABS addendum by NPS, LBNL has adequately mitigated for the potential loss of Building 51. In addition, the Advisory Council on Historic Preservation (ACHP) has found that DOE has met its responsibilities under Section 106 of the National Historic Preservation Act (please see Appendix H).

In addition to the HAER/HABS documentation, LBNL plans to commemorate the scientific achievements attributed to the Bevatron with a monument and/or display listing the historic discoveries that occurred there.

Committee to Minimize Toxic Waste
P.O. Box 9646, Berkeley, CA 94709

Mr. Carl Schwab
U. S. Department of Energy
Berkeley Site Office, MS 90R1023
One Cyclotron Road,
Berkeley, CA 94720

May 22, 2006

Subject: Comments on The Lawrence Berkeley National Laboratory's (LBNL) Draft Environmental Assessment (DEA) for the Demolition of the Bevatron Particle Accelerator, Building 51 and 51A.

Dear Mr. Schwab,

PRESERVATION OF THE BEVATRON IS THE MOST PROTECTIVE ALTERNATIVE FOR BERKELEY NEIGHBORHOODS, OUR HISTORY, CULTURE, HEALTH AND THE ENVIRONMENT CMTW-1

• Preserve the Bevatron/Building 51 in commemoration of Nobel Laureate Owen Chamberlain (1920-2006) who was involved in the discovery of the antiproton at the Bevatron and worked on the Manhattan Project during the Second World War. Chamberlain was present in Los Alamos at the testing of the first atomic bomb. Shortly after, he became an outspoken activist for arms control and other issues of social concern. Owen Chamberlain recommended the conversion of the Bevatron facility to a historical and educational resource. CMTW-2

• Preserve the Bevatron/Building 51 in celebration of LBNL's 75th anniversary in Berkeley scheduled for Founders Day, August 26, 2006. CMTW-3

• Preserve the Bevatron/Building 51 to provide the greatest protection for the health and safety of employees, nearby residents and wildlife (i.e. threatened Alameda Whipsnake) and those pedestrians exposed along routes for trucking out radioactive and hazardous waste which will result if the Bevatron is demolished. CMTW-4

In December of 1995, the California State Office of Historic Preservation, Department of Parks and Recreation listed the Bevatron, Building 51 and 51A as California Historic Resources with the following statement:

> *"Building 51 and 51A are eligible for inclusion on the National Register of Historic Places under Criterion Consideration G, as defined in 36 CF 60.4. The Building has strong associations with historic developments in the field of particle physics and was the site of a number of significant breakthroughs.*
>
> *The Bevatron is also noted for its associations with three Nobel Prize-winning physicists (Louis Alvarez, Owen Chamberlain, and Emilio Segre). The breakthroughs developed by these three men were the result of the technology provided by the Bevatron, and its position as the premier facility of its type in the 1950s."* (Attachment 1.)

For the reasons noted in this statement, we consider it mandatory that LBNL and the Department of Energy (DOE) preserve the Bevatron , Building 51/51A Complex, as a living science history site, a museum and education center for the benefit of future generations interested in science, history, architecture and engineering. CMTW-5

However, there are other reasons that preservation of the Bevatron must be the alternative chosen, and not the demolition of the building. These reasons have to do with the environmental impacts which will be miniscule with the Bevatron preserved in place, compared to the environmental impacts arising from the demolition of the facility. Preservation, therefore, provides the greater protection of the health and safety to employees, nearby residents and wildlife (i.e. threatened Alameda Whipsnake) and those exposed along routes for trucking out radioactive and hazardous waste. Some of the potential environmental impacts from the Bevatron demolition are as follows: CMTW-6

- radioactive, lead and asbestos dust permeating the atmosphere of the Berkeley Lab, surrounding neighborhoods, UC dormitories,
- radioactive and toxic dusts being washed down to further contaminate Berkeley's groundwater which should be of potential beneficial use as drinking water in case of disasters or severe drought, CMTW-7
- exposure of pedestrians, shoppers, vehicle drivers and passengers to radioactivity as radioactive Bevatron concrete and metal debris is trucked on City of Berkeley streets (i.e. Hearst, Oxford, University Avenue, Shattuck Avenue, Adeline, and Ashby Avenue) to the freeway, CMTW-8
- severe and extended exposure would occur if any of the trucks hauling radioactive debris were involved in an accident. This is quite probable in view of the twelve accidents per year involving truck collisions along the project truck routes, that occurred between 2002-2004. (p. IVK-15 Table IVK-1 Draft EIR 10/21/05), CMTW-9
- exposing other communities to radioactive and hazardous waste by dumping it in nearby landfills, i.e. Altamont, Richmond, Nevada Test Site, Clive,Utah, etc. CMTW-10
- continuing to speak of "low level" radioactive waste vs. "high level" radioactive waste as though the former were safe, despite the recent National Academy of CMTW-11

Sciences Panel BEIR VII (Committee on Biological Effects of Ionizing Radiation) Report that there is no safe of dose of radioactivity (Attachment 2.), CMTW-11

• Department of Energy treating materials and waste with 2pCi/g of radioactivity and the Department of Transportation treating materials and waste with 270pCi/g of radioactivity as non-radioactive, which requires less safety precautions during transportation and allows the dumping of these materials in ordinary landfills and, therefore, their potential recycling/reuse in household goods and commercial medical equipment, CMTW-12

• a health disaster to project workers, lab employees, students and downwind neighbors should precautionary measures fail during the demolition of the transite exterior siding of Building 51, which contains 20% asbestos fibers. CMTW-13

The DEA is deficient in many respects. Because the Bevatron is eligible to be listed on the National Register of Historic Places, a thorough investigation of all the potential environmental and historic resource impacts of the demolition must be addressed in an Environmental Impact Statement (EIS), including the following: CMTW-14

Hydrology and Water Quality

The EA/EIS must provide: a geologic cross section of the three groundwater plumes which converge at the Bevatron site, i.e. Building 51/64 VOC plume, Building 7 Freon/VOC plume and the old town VOC/Building 7 Diesel plume, to show the depth and concentration of groundwater contamination in the four acre Bevatron site and vicinity. CMTW-15

In addition to the Bevatron core area, more monitoring wells should be located laterally along the Cyclotron Fault and New Fault because they could act as conduits for the contaminated groundwater. CMTW-16

Additional groundwater monitoring wells are needed (a) west of the northern lobe of the Building 51/64 plume as well as (b) west of the western lobe of Building 71 solvent plume to show whether the two plumes converge into a topographic swale and (c) west of the old town plume, specifically in the area between Buildings 46 and 51. All of these plumes are in the Blackberry Creek Watershed and drain west toward the city of Berkeley and San Francisco Bay. (Attachment 3.) CMTW-17

A sampling strategy must be developed and implemented prior to the circulation of the EA/EIS to characterize and provide comprehensive data on the extent of the potential groundwater contamination plume under the Building 5 1/Bevatron. Soil boring(s) and testing should be part of this investigation. CMTW-18

The EA/EIS should show a map of the groundwater plumes in 1995 and in 2005, as they expanded during the RCRA investigations under LBNL's Environmental Restoration Program, so as to illustrate the direction and rate of their movement. CMTW-19

According to the Environmental Checklist's Project Description: "Soil and groundwater contamination are known to be present in some areas beneath Building 51 /Bevatron." The primary known chemicals of concern are chlorinated volatile organic compounds (VOCs) in soil and groundwater. In addition, PCBs have been detected in some groundwater CMTW-20

samples. Contamination in soil, outside the plume source areas, has included primarily chlorinated VOCs, petroleum, aromatic hydrocarbons, polycyclic aromatic hydrocarbons, PCBs and Mercury. CMTW-20

It appears that the location of the groundwater monitoring wells in the general Bevatron site is insufficient to characterize the full extent of these plumes. Are the contamination plumes interrelated? It appears that there are no groundwater sampling wells located in the basement of the Bevatron core area. CMTW-21

If the Bevatron structure is removed, what are the potential effects of the increased rainfall on the now pervious site? What protections will be put in place in the future site design to protect further impact of rainwater on existing groundwater plumes? How will the increased groundwater influence slope stability? CMTW-22

Pulling the concrete plug: How will the removal of the Bevatron and its subterranean structures impact the movement and current hydraulic controls of these groundwater contamination plumes? This factor alone is reason for additional groundwater evaluation and monitoring wells. How is LBNL preparing to prevent any contamination from entering the creeks and ending up in downtown Berkeley where Strawberry Creek flows day-lighted through many public and private properties? For this reason, all site clean-up must be done to residential standards. CMTW-23

Biological Resources and Hazards and Hazardous Materials

The EA/EIS must answer the following questions and provide specified information as follows:

1. Tables showing the specific quantities of activated (containing induced radioactivity) material (e.g., electromagnets, scrap metal, steel, copper, lead, concrete blocks, etc.) and by which of the following radionuclide and by what amount of radioactivity (expressed in Curies) they are activated: Ar-42, Ba-133, Co-60, Cs-137, Eu-152, Eu-154, Fe-55, Ti-44, etc. CMTW-24

2. What is the level of "natural" and/or "background" radioactivity LBNL assigns to and/or deducts from each specific material before shipping? CMTW-25

3. What is the actual activation level of each material to be shipped, particularly for every material referred to as being "slightly radioactive" and "slightly activated"? (DOE 2pCi/g vs. DOT 270pCi/g?) CMTW-26

4. Swipe sampling protocols, e.g. the criteria for selecting items "thought to pose reasonably foreseeable risks" from surface contamination: the portion of the surface to be swiped. CMTW-27

5. The quantities of "non-activated" metals and concrete shielding blocks that are scheduled for shipment to government and private sector parties, with certification by non-DOE parties that the metal within the blocks would not be recycled. CMTW-28

6. The quantities of "non-activated" concrete blocks to be broken into rubble and released for construction projects and road building (again the metal contained within the blocks to be certified non-recyclable as above (see #5) CMTW-29

7. A description of the air monitoring system LBNL has in place to determine any changes in air quality during the deconstruction process, if it proceeds. CMTW-30

8. The capacity of first responders to deal with potential accidents or spills. CMTW-31

9. The detection limits of the surveying instrumentation. CMTW-32

10. Name and location of the specific municipal landfills to which "non-activated" materials will be sent where the landfill operator must certify that the metals will not be recycled. CMTW-33

11. Specifically what is to be shipped to the Nevada Test Site and Yucca Mountain, Nevada, Altamont landfill in Alameda County and Richmond landfills in Contra Costa County, CA, a private landfill in Clive, Utah, Hanford, WA, or other DOE facilities/sites? CMTW-34

12. The effects on the potential beneficial uses of Berkeley's large aquifer, the Lennart Aquifer) i.e. availability in times of drought. Please describe LBNL's request to the Office of the U. C. President to declare groundwater at LBNL non-potable, i.e. initiating the process of declaring LBNL site (Strawberry Creek watershed) as **Brownfields** . CMTW-35

13. Potential effects upon the endangered Alameda Whip snake for which LBNL is critical habitat. CMTW-36

14. What are the cumulatively significant effects, on the human (and endangered Alameda Whip snake) environment, of the Bevatron demolition concurrent with the decommissioning and decontamination of the National Tritium Labeling Facility and the construction and operation of the Molecular Foundry. CMTW-37

15. How radioactive and hazardous materials will be packaged for shipping. How will the trucks transporting hazardous site debris be externally identified as they move through our city and beyond Berkeley. CMTW-38

16. How will radioactive materials, those considered to be "non-radioactive", be packaged for shipping. What are the various criteria used by LBNL to determine materials to be "non-radioactive"? CMTW-39

17. A consideration of alternatives to the demolition and shipping of unpackaged radioactive materials, which are considered non-radioactive, e.g. allowing radioactive materials to decay in place, without further demolition until fully decayed. CMTW-40

18. A comprehensive description of the various beam targets (including the magnet gap) and the beam dump areas during the Bevatron's forty-year history, and a sampling strategy to determine where the highest concentrations and types of radioactivity are located. CMTW-41

The U. S. Environmental Protection Agency's (US EPA) current recommendation is to manage asbestos in place, i.e. leave it alone. For abatement, to encapsulate, enclose, encase asbestos at the Bevatron in areas where needed to prevent exposure to the public. Same abatement strategy should apply for lead. CMTW-42

Further, if the proposed Bevatron demolition proceeds, DOE must obtain COMMUNITY ACCEPTANCE from Clive, Utah residents and other communities who might be the recipients of LBNL's hazardous and radioactive waste. (See Item 11 above.) CMTW-43

Air Quality and Transportation and Traffic

1. If LBNL ends up proceeding with the shipping of the Bevatron debris, all trucks involved must have hazardous materials warning placards in accord with the opinion of the National Transportation Safety Board and the Executive Director of the International Association of Fire Chiefs (West County Times, April 9, 2005). The hazardous materials signs on trucks help firefighters and health officials respond to accidents in the event that hazardous contents are exposed. If the trucks are not properly marked, community safety and emergency responders safety will decrease significantly. CMTW-44

Note: In the past month, there were two deaths in Berkeley associated with construction trucks involved in traffic accidents, within blocks of the UC Berkeley campus. (See attachment 4.)

2. All debris trucks should be fully enclosed van-type vehicles. CMTW-45

3. The air quality along the truck route should be monitored from the Bevatron to 1-80 with a stationary air monitoring protocol. CMTW-46

4. DOE must allow the inclusion of the City of Berkeley Transportation Commission's comments to the DEA/DEIS transportation, traffic and circulation issues as they will not be able to respond until they meet in June 2006. CMTW-47

Geology and Soils

The Bevatron is located on a four-acre site in the western portion of LBNL within the Blackberry Creek (a.k.a. the North Fork of Strawberry Creek) Watershed. The site is in the Hayward/East Canyon/Wildcat Canyon Earthquake Fault Zone, surrounded by two cross faults: the Cyclotron Fault to the south and the New Fault to the north.

The Final EA/EIS must include:

1. A most comprehensive earthquake fault map that would include all the faults in the entire Strawberry Creek Watershed, whether active or not, and an interpretation of the significance of the presences of these faults regarding the transport of surface and groundwater within the area of LBNL, where the Bevatron is located. CMTW-48

2. Watershed map for the LBNL hill site showing the various watershed and sub-watershed divides with a detail of the Blackberry Creek watershed and the four-acre Bevatron site. CMTW-49

3. A Seismic Hazard Zone Map which would show areas in the Strawberry and Blackberry Creek Watersheds where previous landslides had occurred, as well as all topographic, geological, geotechnical, and subsurface water conditions which indicate a potential for permanent ground displacement. CMTW-50

According to a 1949 geologist (C. Marliave) report on the bedrock conditions at the Bevatron site "...the area at the Bevatron is to be excavated and leveled off to elevation 710. The bedrock beneath this beveled surface will be comprised of poorly consolidated Orinda sediments... The Orinda formation absorbs water freely and the lava flows and breccia that are associated with it are also quite pervious so that the whole mass becomes readily saturated... There appears to have been considerable land sliding in the

amphitheatre in which the Bevatron is to be located - and during periods of heavy rainfall, the underlying Orinda sediments become quite soft from absorbed water... seeps come out of the ground in many places.. .there are two known permanent springs in the area where tunnels have been driven into the hillside and pipes leading out from the caved entrances have been flowing water for many years."

Even though landside deposits may have been modified or have fill placed over them, their subsurface characteristics/failure planes may exert controls on groundwater flow patterns and thus on the movement contaminant plumes at the hill site. Mapping of the historic landside distribution in the EA/EIS is extremely important for understanding/interpreting how the contaminant plumes may be distributed on the hill. CMTW-51

4. What is the current configuration and condition of the engineered drainage around the Bevatron site? How is groundwater from the seeps and springs intercepted and captured? Where are water sources diverted? Do creek beds of the historic creeks function as conduits for these waters? According to the 1875 F. Soule Map titled: Strawberry Valley and Vicinity showing the natural sources of the water supply of the University of California, at least two of the branches of the North Fork of Strawberry Creek were located directly under the Bevatron Complex. Please provide a historic map of the site showing these watercourses and their current state. CMTW-52

Cultural Resources

The EA/EIS must carefully consider alternatives to demolition and removal that would allow the Bevatron and its contamination to remain on site in relative containment. On site containment will allow the radioactivity to decay in place and not be hauled away to impact other communities. This would also preserve the historic aspects of the Bevatron as it is eligible for listing in the National Register of Historic Places for the research in particle physics that resulted in four Nobel prizes. In December 1995 the California State Office of Historic Preservation listed the Bevatron, Buildings 51 and 51A, as California Historic Resources, as stated earlier.

Bevatron complex, known as the Bevalac District is also eligible for the National Register of Historic Places at a national level of significance for the period 1949-1993. The EA/EIS must address the historic resource impacts of the proposed Bevatron demolition on the Bevalac Historic District. (See attachment 5.) CMTW-53

An application requesting Landmark status for the Bevatron is pending before the City of Berkeley Landmarks Preservation Commission, LPC (See attachment 6). The LPC opened the public hearing May 4, 2006 and continued the hearing to June 1st at the applicant's request, to provide time to obtain document not yet released by the DOE, the Historic American Engineering Record (HAER) Addendum.

<u>We therefore request that DOE complete the HAER Addendum, incorporate it into the EA/EIS, and extend the public comment period to receive public comment on the information in the HAER Addendum. This would allow greater understanding of what is actually proposed to be demolished.</u>

There has been broad support to "Save the Bevatron and Building 51". Over 100 individuals have signed petitions to preserve the Bevatron as a City of Berkeley and National Landmark. (See attachment 7.)

We believe that according to the National Historic Preservation Act, Section 106, the use of Federal funds is prohibited in the demolition of a site that is eligible for listing in the National Register of Historic Places, such as the Bevatron.

In addition, the Memorandum of Agreement (MOA) signed by DOE, California State Historic Preservation Officer and the Advisory Council on Historic Preservation regarding the demolition of the Bevatron building was ratified over eight years ago without any public notice or citizen participation and prior to the release of any environmental review documents for public inspection and comment. We ask that a new MOA be drafted with public participation prior to the completion of EA/EIS. (See attachment 8.) CMTW-54

The projected cost of 85 million dollars for the Bevatron demolition and removal is truly appalling taking into consideration the enormous initial cost of the construction of the facility in the early 1950s, which was approximately 10 million dollars. Therefore we propose that LBNL, in celebration of its 75th Anniversary in 2006, declare an International Architectural Competition for the design and restoration of the Bevatron, and designate it as a historic and educational resource/landmark, as proposed by Nobel Laureate Owen Chamberlain. (Attachment 9). CMTW-55

The shape of the Bevatron and its steel construction lends itself magnificently to the possibility of it being a center courtyard feature for future development at the site. This option would save taxpayers over 80 million dollars and save many communities from the serious potential pollution which the demolition, transportation, and waste dumping would bring about.

Please respond to the comments above in the final EA/EIS as well as to the enclosed letters of concern from Gene Bernardi, James Cunningham, Social Justice Committee of the Berkeley Fellowship of Unitarian Universalists, Public Citizen, Tri-Valley Cares, and BLUE. (See attachment 10.)

Sincerely,

Pamela Sihvola, Co Chair CMTW

P. O. Box 9646, Berkeley CA 94709

In support and signing onto concerns as stated above

L A Wood, www.berkeleycitizen.org

1803 Bonita Avenue, Berkeley CA 94709

Pamela Sihvola, Co-Chair, Committee to Minimize Toxic Waste, May 22, 2006 (Comments Identified as "CMTW-1 through CMTW-55")

Introductory note: Many of the comments from the Committee to Minimize Toxic Waste (CMTW) are either identical or very similar to comments submitted in May and June 2005 by this same organization or one of its members (Pamela Sihvola) regarding two documents cited on pages 42-45 of the EA, the *Draft RCRA Corrective Measures Study Report for the Lawrence Berkeley National Laboratory* ("CMS Report"), February 2005, and the *Initial Study and Tiered Negative Declaration for the RCRA Corrective Measures – Remedy Selection Project, Lawrence Berkeley National Laboratory*, April 2005 (draft) and August 2005 (final). the *Environmental Assessment and Corrective Measures Study Report for Remediating Contamination at Lawrence Berkeley National Laboratory Regulated under the Resource Conservation and Recovery Act* ("DOE EA/CMS"), DOE/EA-1527, September 2005.

These CMTW comments and DTSC responses to comments are contained in Appendix K to the DOE EA/CMS, *Department of Toxic Substances Control (DTSC) Response To Comments, Lawrence Berkeley National Laboratory on Proposed Cleanup Remedies in the Corrective Measures Study Report and CEQA Negative Declaration*, August 31, 2005.[13]

As they are directly relevant to CMTW's comments on the EA, some of the CMTW comments and DTSC responses from Appendix K to the DOE EA/CMS are reproduced below. As evidenced in the DTSC responses, many of the materials requested by CMTW in their comments on the Draft EA have already been made available to the public via the CMS Report itself and a Berkeley Lab publication referenced by the CMS Report, the *Draft Final RCRA Facility Investigation Report for the Lawrence Berkeley National Laboratory Environmental Restoration Program* ("RFI Report"), September 2000.[14] The EA for the Bevatron and Building 51 Demolition is not intended nor required to duplicate the CMS Report and its supporting environmental documentation, nor the multi-volume RFI Report.

Response CMTW-1

Comment noted. See Section 3.1.1, Introduction, page 11, for discussion regarding Bevatron awards and achievements (see also Section 4.2.3, Cultural Resources, page 33-34).

Response CMTW-2

The respondent's opinions are noted.

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13 part from being available as part of the DOE EA/CMS Report, this document also is available on DTSC's website at http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/LBNL_CEQA_Response.pdf. See also http://www.dtsc.ca.gov/HazardousWaste/Projects/LBNL.cfm to locate copies of the original CMTW comment letter and attachments.

14 RCRA is the Resource Conservation and Recovery Act; see the DEIR at pages IV.F-2 - 4. The RFI Report is available at the main branch of the Berkeley Public Library. As stated on the cover page of the RFI Report, "The draft final RCRA Facility Investigation Report (RFI) Report, for the Lawrence Berkeley National Laboratory Environmental Restoration Program, dated September 2000, was approved by the Department of Toxic Substances Control (DTSC) as final. The final RCRA Facility Investigation Report (RFI) Report contained herein consists of the draft final document accompanied by the DTSC approval letter dated July 27, 2001."

Response CMTW-3

The respondent's opinions are noted.

Response CMTW-4

Comment noted. Section 4.2.2, Biological Resources, on page 31, states that Alameda whipsnake (*Masticophis lateralis euryxanthus*), federally listed as "threatened," has not been sighted at LBNL, although suitable habitat may be present on the Lab site.

As stated in response DT-2 above, risks from the transport of waste materials that would be generated by the Proposed Action are addressed in Section 5.1.5, Hazards and Human Health (see pages 68-71), and Section 5.1.10, Traffic and Circulation (see pages 79-84).

Response CMTW-5

The purpose and need for the Bevatron and Building 51 Demolition is described in Section 3.0, Description of Proposed Action and Alternatives. As described in Section 3.0, the facility does not meet current building codes, the roof leaks in several locations, and portions of the structure do not comply with current seismic design standards. In addition, as described in Section 5.1.5, Hazards and Human Health, various types of hazardous materials are present in Building 51. In particular, portions of the facility are radiation controlled areas, and are inaccessible to the general public.

Response CMTW-6

See Section 3.2.2, Preservation Alternative. As discussed in that section, this alternative would not achieve the objectives of the Proposed Action.

Response CMTW-7

Comment noted. Section 5.1.6 discusses Hydrology and Water Quality. See also Section 5.1.5, Hazards and Human Health.

Response CMTW-8

Disposal of the materials that would be generated by the Proposed Action is discussed at various places in the EA, including Sections 5.1.5, Hazards and Human Health (e.g., pages 68-71), 5.1.10, Traffic and Circulation (e.g., pages 79-84), 5.1.8, Public Services (e.g., pages 76-77) and 5.1.9 Public Utilities (e.g., pages 77-79).

Response CMTW-9

See response CMTW-8. Accident data for trucks are presented in Section 5.1.10, Traffic and Circulation; see pages 79-84.

Response CMTW-10

See response CMTW-8.

Response CMTW-11

Comment noted. The respondent referenced an outside report which employs a different methodology for measuring a “safe dose of radioactivity.”

Response CMTW-12

Comment noted. As stated in Section 5.1.5, Hazards and Human Health, (page 68) the “process of removing surface contamination from hazardous materials would follow standard LBNL policies and procedures, which are designed to remove or seal and dispose of the contaminants without hazard to workers, the public, or the environmental in accordance with regulatory requirements.” Furthermore, standard measures are typically used by the DOE and the DOT in measuring the radioactivity of a material and would be applied to the Proposed Action as well. Disposal of any radioactive material would occur in an approved landfill.

Response CMTW-13

Comment noted. The policies and procedures that would be applied to the Proposed Action are standard LBNL and statewide policies and procedures and would be performed by individuals with sufficient experience and certification. Speculating that these measures would fail is unsubstantiated. Also see Response CMTW-12.

Response CMTW-14

An Environmental Assessment is the appropriate document for the Proposed Action. See response MK-3 above.

Response CMTW-15

Groundwater contamination in the Proposed Action area, including maps showing contaminant contours, is discussed in Section 5.1.5, Hazards and Human Health. The comment does not specify why the description and analysis in Section 5.1.5 is deficient, or why the additional information requested is necessary, nor provide substantial evidence regarding a significant impact that would result from the Proposed Action.

A similar comment (16-21) was made by CMTW in regard to the CMS Report ("The Final CMS Report must include a geologic cross section of each plume to show the depth and concentration of groundwater contamination in the four-acre Bevatron site and vicinity"). A portion of the DTSC response to that comment is applicable here:

> **RESPONSE 16-21** Geologic cross sections showing depth and contaminant concentrations in each of the groundwater contaminant plumes in the Bevatron site are presented in the RFI

Report, with the exception of the Building 51L plume, which was still being characterized at the time. Geologic cross sections illustrating key relationships for the major plume are also presented in Appendix I of the CMS Report, which includes a cross section through the Building 51L plume area.

The relation of the RFI Report to the CMS was explained in DTSC response 16-7:

RESPONSE 16-7 The CMS Report is a complementary report to, and relies on the data presented in the LBNL RFI report, which is the principal site characterization document. For this reason, the CMS only presents a brief summary of the geologic characterization data presented in the RFI Report and cites the RFI report for detailed information. The RFI Report was released for public review on November 15, 2000 and public hearings were held on December 6, 2000 and January 24, 2001.

The RFI report presents site-wide maps of bedrock geologic units, faults, surficial geologic units, stream courses, storm water drainage systems, and landslides. In addition, the site was divided into module areas for which more detailed geologic maps, geologic cross sections, and hydrauger locations were presented. These maps and cross sections were based on the highly detailed synthesis of geologic data presented in the Converse Consultants 1984 Hill Area Dewatering and Stabilization report (Converse, 1984), and supplemented by additional geologic mapping and subsurface drilling data obtained by Environmental Restoration Program (ERP) scientists during the RFI. The Converse Consultants synthesis included a thorough review and analysis of all known previously existing geologic studies at and adjacent to LBNL, and presents a detailed geologic map of LBNL and the surrounding regions as Plate 2 of that report.

Response CMTW-16

LBNL does not agree that there is either a "Cyclotron Fault" or a "New Fault" in the vicinity of the project site. A similar comment (16-22) was made by CMTW in regard to the CMS report ("In addition to the Bevatron core area, more monitoring wells should be located laterally along the Cyclotron Fault and New Fault because they could act as conduits for the contaminated groundwater"). A portion of the DTSC response to that comment is applicable here:

RESPONSE 16-22 There is no geologic evidence for the presence of the New Fault, which was proposed by Lennert and Associates. The reference to the Cyclotron Fault is not known. If this refers to Great Valley Group/Orinda Formation fault contact, then more monitoring wells are not required, since the fault contact is oriented approximately perpendicular to the groundwater flow direction. Several monitoring wells are located close to this contact near Building 51, and groundwater sampling or water level data from those wells do not show any evidence that the contact acts as a preferential conduit for contaminated groundwater flow. It should be noted that the depiction of geologic faults as conduits for groundwater flow is not correct. Although the ability of earth materials to transmit water can in some cases be higher in fault zones, in many cases faults have little or no effect on flow and the fine-grained materials formed by fault movement often serve to impede flow.

Also relevant is a portion of DTSC Response 16-14:

> The RFI and Draft CMS Report do evaluate potential seismic hazards. The Alquist-Priolo Earthquake Fault Zone near LBNL is shown on Figure 4.2-6 in the RFI Report. The zone represents an area within approximately 1/8 of a mile of the surface trace of an active fault where surface rupture might be expected to occur during an earthquake. All areas of soil and groundwater contamination [at LBNL] are outside this area, except for a small area of soil contamination under Building 88 that has been cleaned up to an unrestricted land use-level.

See also responses CMTW-18 and CMTW-21 below.

Response CMTW-17

Berkeley Lab does not agree that additional monitoring wells are necessary in the vicinity. A similar comment (16-23) was made by CMTW in regard to the CMS report ("Additional groundwater monitoring wells are needed (a) west of the northern lobe of the Building 51/64 plume as well as (b) west of the western lobe of Building 71 solvent plume to show whether the two plumes converge into a topographic swale and (c) west of the old town plume, specifically in the area between Building 46 and 51. All of these plumes are in the Blackberry Creek Watershed and drain west toward the city of Berkeley and San Francisco Bay ("Attachment 13"). A portion of the DTSC response to that comment is applicable here:

> **RESPONSE 16-23** There is no technical basis for the additional groundwater monitoring wells suggested. Two groundwater monitoring wells are located down-gradient (west) of the Building 51/64 plume along the former drainage to North Fork Strawberry Creek. Groundwater flow from the "northern lobe" of the Building 51/64 plume would converge on these wells. Contaminants have not been detected in either of these wells and therefore additional monitoring wells are not needed.
>
> Two monitoring wells are located along the former drainage to North Fork Strawberry Creek at the down-gradient edge of the "western lobe" of the Building 71 solvent plume (assumed to refer to the Building 71 Solvent/Freon plume in the vicinity of Buildings 71C through 71K). Concentrations of groundwater contaminants in these wells have either been below the detection limit or well below MCLs for the past 10 years. Groundwater contaminants were generally not detected in a third well that was located in this area. Based on the extensive data available, the Building 51/64 and Building 71 plumes do not converge; however, even if they did converge, there would be no change in the proposed corrective measures.
>
> Several monitoring wells are located between Building 46 and Building 51. Groundwater contaminants have generally not been detected in these wells. In addition, there is a slope stability well SSW19.63 located between Buildings 51 and 46 in the area of potential concern indicated on Attachment 13. SSW19.63 has been sampled approximately annually for VOCs since 1994 to ensure that the Building 46 subdrain adequately captured the down-gradient edge of the Building 52 Lobe. Except for trace concentrations of chloroform (approximately 1 µg/L or less), contaminants have not been detected in this well.

Note that Attachment 13 [LBNL note: Attachment 3A to the CMTW comments on the Bevatron and Building 51 DEIR is identical to a portion of this earlier Attachment 13] of the comments does not accurately reflect current geologic conditions at LBNL.

The attachment shows “earthquake faults”, “historic landslides” and “unsampled areas which could contain contaminated plume(s)” superimposed on a facility map of the known groundwater chemical plumes and the Building 75 tritium plume. The “earthquake faults” shown on the map are primarily those shown on Plate 3 (i.e. compilation of prior work) of the Converse Consultants 1984 geologic synthesis. As described above, the presence of most of these faults was based solely on conjecture; extensive analysis of field data by Converse Consultants indicated that there was no evidence for their existence. The feature labeled “earthquake fault lineation (sic) undetermined interpreted from 1939 photos” is not based on any known field observations. The areas labeled “historic landslides” do not reflect the current distribution of landslide deposits, which is illustrated in Figure 4.2.7 and 4.2.8 of the RFI Report. The “historic landslides” shown on Attachment 13 are apparently derived from studies that predate cut-and-fill operations, slope stability engineering, and most recent geotechnical studies conducted during development of the facility. In addition to the areas addressed in the preceding paragraph, several other “unsampled areas which could contain contaminated plume(s)” are shown on Attachment 13. These areas are either monitored by existing wells that are part of the groundwater sampling program (and are shown on the map), or are located in undeveloped areas of the facility where contaminants would not be present.

Response CMTW-18

As stated on page 46, “Once Building 51 is demolished, further investigation for potential soil and groundwater contamination at portions of the site that were previously inaccessible would take place, and appropriate corrective measures would be undertaken. Newly discovered environmental releases of hazardous constituents will meet the notification and corrective action requirements in LBNL's Hazardous Waste Facility Permit (EPA ID. no. CA 4890008986), section IV. B. "Newly Identified Releases." Cleanup standards and methods will be consistent with LBNL's Environmental Assessment and Corrective Measures Study Report for Remediating Contamination at LBNL Regulated under the Resources Conservation and Recovery Act (DOE/EA-1527).” Some areas are inaccessible until demolition takes place.

A similar comment (16-21) was made by CMTW in regard to the CMS report ("A sampling strategy must be developed and implemented prior to the publication of the Final CMS Report to characterize and comprehensive data on the extent of the potential groundwater contamination plume under the Building 51/Bevatron. Soil boring(s) and testing should be part of this investigation."). The DTSC response to comment 16-21 is given in CMTW-15, above, and CMTW-21, below.

Response CMTW-19

A comment (9-3) on the CMS Report made by a member of CMTW (Pamela Sihvola) concerned the shape of groundwater plumes at LBNL ("You can see that the plumes have odd shapes. This

is a plume here, it is flowing in an old creek bed of Chicken Creek, and I can't really -- I understand that anyone by looking at the shape of this one or this one or this one or this one, can you say that these plumes are contained? They clearly have moved. The source of contamination that sweeps forth right here and all of these that you see here is moving downstream, downstream along the old creek bed, and the canyon wall is here."). A portion of the DTSC response to that comment is applicable here:

> **RESPONSE 9-3** Groundwater contaminants at LBNL initially moved down-gradient from the locations where the original chemical spills or leaks occurred, thereby forming groundwater contaminant plumes. These plumes eventually reached equilibrium and further down-gradient movement of the plumes stopped. The shape of a plume cannot be used to determine whether or not it is currently moving, but is the result of the combined effects of several factors including: a) the locations of the original spills; b) the chemical properties of the contaminants, c) the groundwater gradient (direction of flow) and velocity; d) the time since the initial contaminant release; and, e) the action of natural and artificial mechanisms (diffusion, dilution, degradation, pumping etc.) that attenuate (reduce concentrations of) contaminants. The plumes stabilized after attenuation processes reached equilibrium with the factors that caused them to move. The groundwater contaminant plumes at LBNL are not currently moving, and there is no evidence of recent movement, based on data collected over the past 13 years.
>
> The degree of containment of a plume cannot be determined from its shape, but, must be assessed by viewing variations in contaminant concentrations with time in key monitoring wells. Such data are presented in detail in both the RFI and CMS Reports, and show that the groundwater contaminant plumes are contained; that is, the concentrations of contaminants remain relatively static or are have been decreasing in key wells monitoring the down-gradient edges of the plumes.

Response CMTW-20

A similar comment (16-21) was made by CMTW in regard to the CMS report ("It appears that the location of the groundwater monitoring wells in the general Bevatron site is insufficient to characterize the full extent of these plumes. Are the contamination plumes interrelated? It appears that there are no groundwater sampling wells located in the basement of the Bevatron core area."). A portion of the DTSC response to that comment is applicable here:

> **RESPONSE 16-21** The number and locations of groundwater monitoring wells are sufficient to characterize the magnitude and extent of the groundwater plumes in the Bevatron area and no additional wells are needed to characterize the extent of the plumes. For each of the plumes in the Bevatron area, groundwater monitoring wells have been installed at the contaminant source location, within the plume bodies, cross-gradient from the plumes, and down-gradient from the plumes, thereby defining the extent of the plumes. In addition, a number of wells have been installed in multilevel clusters to assess the depth distribution of contaminants in key areas of the plumes.

> As described in the RFI Report [referenced in the CMS report], the three contaminant plumes described in the comment are not interrelated. These plumes are each derived from distinct sources, have distinct chemical compositions, and are not contiguous.

No groundwater monitoring wells have been installed beneath the Bevatron core area because of logistical constraints on installing wells in that area. In addition, no Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs) that might constitute potential sources of contamination have been identified in the core area. Wells down-gradient from the core area do not show results indicative of a source of chemical contaminants in groundwater beneath that area. Therefore, there is no basis for installing wells or collecting soil samples. If there are any indications of contamination beneath the core area when the Bevatron is demolished, additional investigation will be conducted.

Response CMTW-21

See response CMTW-20 above.

Response CMTW-22

A similar comment (16-22) was made by CMTW in regard to the CMS report ("The Final CMS Report must include the potential effects of the increased rainfall on the now pervious site, if the Bevatron structure is removed. What protections will be put in place in the future site design to protect further impact of rainwater on existing groundwater plumes? How will the increased groundwater influence slope stability?"). A portion of the DTSC response to that comment is applicable here:

> **RESPONSE 16-22** [Regarding future site design] Factors such as slope stability, potential soil and groundwater contamination beneath the building, and the effect on corrective measures proposed for adjacent areas of groundwater contamination would be considered in any redevelopment of the site.
>
> Based on results from the numerous groundwater monitoring wells surrounding the Building 51 complex footprint, there is no evidence from significant groundwater contamination beneath the Bevatron core area. Potential groundwater contamination will be evaluated during demolition and redevelopment of the site, and additional monitoring wells will be installed if necessary.

Stormwater runoff would continue to be discharged into the existing storm drain system that surrounds the complex. This drainage system has the proven capacity to contain surface water runoff. This drainage system is also designed to capture and drain water present in the subsurface. This factor would limit any rise in groundwater levels following completion of the project, either from increased percolation into the now pervious surface or from the pervious slopes immediately uphill from the site. The nearest downhill slopes are a relatively significant distance away and are constructed with an engineered reinforced fill. Thus, the affect on uphill and downhill slope stability would remain largely the same as current conditions.

As stated on page 74 in Section 5.1.6, Hydrology and Water Quality:

"Stormwater runoff from the proposed project is currently discharged to the North Fork of Strawberry Creek. This condition would not change under the post-Building site configuration. Following the demolition and removal of Building 51 and its foundation, the demolition zone would be converted to vacant space and hydro-seeded with native grasses. This would allow varying amounts of surface water to percolate into the ground rather than flow along the surface, especially early in the rainy season when soil conditions are not yet saturated. The percolation of surface water into the ground would slightly reduce the overall quantity of surface water runoff. Because the Proposed Action would cause stormwater runoff on the subject site either to be slightly reduced or to remain the same as under existing conditions, the impact on runoff rates and volumes discharge to the North Fork of Strawberry Creek would be negligible."

The present storm drain system would be augmented with an additional drainage line that extends into the center portion of the project site. This line will capture a small fraction of the stormwater runoff. The remaining stormwater would percolate into engineered backfill soil with some amount potentially reaching the contaminated groundwater plumes in the area. These plumes have been relatively stable in their movement and are predominantly found outside the footprint of the Building 51 complex under impervious surfaces that will remain after completion of the project. The Lab's Environmental Restoration Program has numerous wells down-gradient from the project site. It is not anticipated that any stormwater that might potentially reach contaminated groundwater would cause the groundwater plumes to move or significantly affect current hydraulic controls. With clean up efforts of these plumes closely regulated by the state's Department of Toxic Substances Control, the Lab will closely monitor chemical concentrations and water levels in these down-gradient wells and initiate any corrective actions should movement of either plume occur.

Response CMTW-23

Measures to prevent contamination from entering creeks are discussed in Section 5.1.6, Hydrology and Water Quality, generally; see e.g., pages 71-74. A similar comment (16-24) was made by CMTW in regard to the CMS report ("The Final CMS Report must include how the removal of the Bevatron (a concrete plug) and its subterranean structures impact the movement and current hydraulic controls of these groundwater contamination plumes. This factor alone is reason for additional groundwater evaluation and monitoring wells. How is LBNL preparing to prevent any contamination form entering the creeks and ending up in downtown Berkeley where Strawberry Creek flows day lighted through many public and private properties? For this reason, all site clean-up must be done to residential standards."). The DTSC response to that comment is applicable here:

> **RESPONSE 16-24** The removal of the Bevatron is not anticipated to have a significant effect on the movement or current hydraulic controls of groundwater contamination plumes. Chemical concentrations and water levels in numerous wells down-gradient from the Bevatron will be monitored and corrective action will be taken if it is determined that contaminated water might enter the creek.

Response CMTW-24

The types of radioactive materials that would be encountered, the way they would be handled, and their potential impacts are discussed in Section 5.1.5, Hazards and Human Health. Quantities

and destinations of the different categories of materials that would be encountered are presented in Table 4 in Section 5.1.9, Public Utilities. The comment does not specify why the description or analysis in the Draft EA is deficient, or why the information requested is necessary, nor provide substantial evidence regarding a significant impact that would result from the Proposed Action.

Response CMTW-25

Background radioactivity levels are described on pages 36-38.

> "There is little likelihood of induced activity in the majority of the concrete shielding blocks, as only the blocks closest to the beams produced by the Bevatron were exposed to thermal neutrons. Surveys to date of similar blocks found within the Building 51 complex confirm that most blocks have no detectable induced activity. Those that have induced activity have low levels of such activity. This low-level induced activity is of a magnitude similar to the natural radioactivity within the concrete, which typically ranges from 15 to 30 picocuries per gram (pCi/g) total activity. This background radioactivity originates from the elements within crushed stone aggregate that is present in all concrete, and comes primarily from the decay of naturally-occurring radioisotopes of potassium, uranium and its decay series, and thorium and its decay series. The induced radioisotopes that are contained within the concrete shielding include cobalt-60, europium-152/154, barium-133, and cesium-137.
>
> In the Bevatron accelerator apparatus itself, the most prevalent material is steel, with a substantial amount of copper and minor amounts of aluminum and other metals. Preliminary surveys indicate that while a greater proportion of the metals may be activated, the range of activity will be similar to that found in the concrete blocks. The primary isotopes in metals are cobalt-60, titanium-44, and iron-55.
>
> ...Materials that LBNL has reason to suspect might contain radioactivity would be characterized by taking external radiation measurements using appropriate survey instrumentation and/or swipe samples according to DOE-approved protocols."

The only radioactivity included in waste manifests is that added as a result of LBNL operations. Background activity is subtracted at the measurement level.

Response CMTW-26

The activation level of each material to be shipped cannot be specified in advance of the actual surveys of such materials. Section 5.1.5 discusses the range of activation levels that are expected based on past experience; see pages 68-71.

Response CMTW-27

The language quoted in the comment does not appear in the Draft EA. As stated on pages 36-38, materials that LBNL has reason to suspect might contain radioactivity would be characterized by

taking external radiation measurements using appropriate survey instrumentation and/or swipe samples according to DOE-approved protocols.

The only portions of the facility suspected to contain radioactivity are located within the inner area of the facility containing the Bevatron apparatus, which is bordered by the concrete shielding blocks. In addition, portions of some of the blocks themselves may be activated. This inner area has been designated a controlled area. Some items from this area have been stored temporarily in other controlled areas. All items from controlled areas would be surveyed before being sent offsite. The type of surveys that would be used would depend upon the items involved.

In the case of the potentially surface contaminated items mentioned in the comment, only a subset of the items located in the controlled areas are liable to have surface contamination. As stated on page 37,

> "As a result of particle beam collisions with these targets, some interior surfaces of the beam tube were contaminated with low levels of various radioactive materials. It is anticipated that very limited amounts of surface radioactivity, affecting a small volume of materials, would be encountered."

To be conservative, all items from controlled areas that might be subject to release, either unrestricted or subject to the DOE Metals Suspension, would be surveyed for surface contamination, even though most are unlikely to be surface contaminated. Swiping would be carried out using protocols consistent with the requirements of DOE Order 5400.5. Items showing any DOE-added activity would be sent to a low level radioactive waste disposal site.

Response CMTW-28

No materials are "scheduled for shipment," as the Proposed Action has not yet been approved. Estimated quantities of the materials listed in the comment are presented in Table 4 in Section 5.1.9, Public Utilities. As stated in the *Agreement between LBNL and DOE Berkeley Site Office, LBNL Implementation of DOE Metal Release Suspension* (April 22, 2005), the DOE Metals Release Suspension does not apply to rebar and other embedded metal materials in concrete that are not surface or volumetrically contaminated due to induced activity; thus, the certification mentioned in the comment would not apply to such metals. It is expected that less than 1 percent of the 12,360 tons of Bevatron accelerator metals listed in Table 4 would be eligible for shipment to landfills, subject to an agreement not to recycle. None would be eligible for unrestricted release.

Response CMTW-29

10,300 tons of concrete shielding blocks are listed in Table 4 as the estimated quantity that would be eligible for unrestricted release. Any portion of this could be broken into rubble and released. However, no commitments have been made to break any blocks into rubble, for any purpose.

Response CMTW-30

Air monitoring at LBNL is described in the Laboratory's annual Site Environmental Report. Regarding radionuclides in particular, as stated in the Air Quality chapter (Chapter 4) in the 2004 edition of that Report:

> Lawrence Berkeley National Laboratory's air monitoring program is primarily designed to measure the impacts from radiological air emissions. The program is designed to meet the requirements established by the United States Environmental Protection Agency (US/EPA) and the United States Department of Energy (DOE) that are contained in the following references:
>
> - 40 CFR Part 61, Subpart H (*National Emission Standards for Hazardous Air Pollutants*, or NESHAPs)
>
> - DOE Order 5400.5 *(Radiation Protection of the Public and the Environment)*.

The main means by which LBNL would monitor the impact from any air emissions resulting from the Proposed Action would be through the Laboratory's network of ambient air monitoring stations, which are strategically located around the Laboratory and collect particulate samples for measurement of gross alpha and gross beta levels. Please refer to the Air Quality chapter of the Laboratory's Site Environmental Report for further details on these stations, including a figure showing their locations.

Response CMTW-31

Police, fire, and other emergency services are discussed in Section 5.1.8, Public Services.

Response CMTW-32

As described on page 37, the detection limit for volume contamination is 2 picoCuries/gram, while detection limits for surface contamination depend upon the radionuclides being surveyed. Instrumentation is calibrated to achieve these detection limits.

Response CMTW-33

Specific landfills have not yet been selected. As stated on page 79, "As part of its standard operating procedures, LBNL consults with landfills prior to the start of demolition activities to ensure that there is sufficient capacity to accept the amount of waste generated by such projects, and has done so for the proposed project. No problems are anticipated in disposing of the various types of waste that would be generated." Table 4 shows the types of destinations where hazardous and non-hazardous waste generated by the Proposed Action would be sent.

Response CMTW-34

See response CMTW-33.

Response CMTW-35

A similar comment (16-26) was made by CMTW in regard to the CMS report ("The Final CMS Report must include the effects on the potential beneficial uses of Berkeley's large aquifer, e.g., availability in times of drought. Of special concern is the Lennert aquifer, currently pumped by the Shively well #1"). A portion of the DTSC response to that comment is applicable here:

> **RESPONSE 16-26** The Lennert Aquifer is up-gradient from areas of groundwater contamination at LBNL; and therefore, there is no effect on the potential beneficial uses of this "aquifer" from LBNL groundwater contaminants.

LBNL has not made the purported request to the Office of the U.C. President described by the commenter, and has no plans to do so.

Response CMTW-36

Section 5.1.2, Biological Resources, discusses the potential impacts of the Proposed Action on threatened and endangered species. As stated in footnote 3, page 31, suitable whipsnake habitat is not present at or near Building 51.

Response CMTW-37

Cumulative impacts are addressed in Chapter 5, Environmental Consequences. The Molecular Foundry was not included in the cumulative impacts analysis because its date of completion was set to occur before the start of the Proposed Action. The Molecular Foundry construction was completed in early 2006. Closure of the National Tritium Labeling Facility, which was completed in 2002, is not concurrent with this Proposed Action. See also response CMTW-36.

Response CMTW-38

Packaging and labeling of hazardous and radioactive materials is discussed in Section 5.1.10, Traffic and Circulation, e.g., at pages 82-83, and in Section 5.1.5, Hazards and Human Health on pages 68-71. DOT requirements for the transportation of these materials in commerce are specified in Title 49 of the Code of Federal Regulations (CFR), Subchapter C. Where any material meets the DOT definition of hazardous or radioactive, it will be transported in compliance with these requirements. This may or may not require the use of specified packaging, depending on the potential for dispersion of the material during transit. Materials that are not defined as hazardous or radioactive in accordance with DOT regulations have no specified packaging requirements. There are numerous other basic transportation requirements that govern the transportation of all materials in commerce. For example, loads must be secured using DOT-approved hold down devices which will ensure that materials do not fall from a vehicle during transportation. Where small objects or debris which cannot themselves be adequately secured to a vehicle are transported, such materials will be packaged in a "strong, tight" package which is designed to contain materials during all conditions incident to normal transportation. Examples of such containers include metal boxes or covered roll-off containers. General non-hazardous construction debris or soil which would be transported in a dump truck must conform to requirements for a cover on the load to prevent release of materials to the roadway or otherwise

endanger other vehicles while in transit. Transportation of Building 51 demolition debris would be conducted in compliance with all applicable Federal, State, and local regulations. LBNL intends to use only transportation companies that are fully licensed and registered for commercial transportation activities.

Regarding the identification of trucks, DOT regulations specify the criteria used to define a material as hazardous or radioactive in transportation and include the requirements for marking and labeling of such materials and placarding of their shipments while in transit. All transportation vehicles are marked with the company name and DOT/Interstate Commerce Commission registration number in addition to other company specific vehicle identification numbers.

Response CMTW-39

See response CMTW-38.

Response CMTW-40

Radiological decay in place programs are designed for short-lived isotopes and allow the generator to hold these materials in storage until they have decayed to levels below detection limits, at which point they are managed as non-radioactive wastes. This is done for materials with isotopes that have much shorter half-lives than those present in the Bevatron. For example, regarding medical isotopes, the Nuclear Regulatory Commission authorizes "decay-in-storage" only for those isotopes that have half-lives shorter than 120 days (10 CFR 35.92). The predominant isotope in the Bevatron materials is Cobalt-60, which has a half-life of 5 years. It would be inappropriate to apply a program designed for short-lived isotopes to these materials.

In addition, radioactive materials typically are stored for 10 half-lives before they are released. This would result in storage times of 50 years or more for isotopes such as Cobalt-60. In effect, this would mean the postponement of the Proposed Action in favor of one of the alternatives examined in Section 3.2, Alternatives, e.g., the No Action Alternative. The EA concluded that this would not attain the goals of the Proposed Action.

Lastly, decay in place would apply only to radioactive materials. Other hazardous materials that are or may be present at the facility, such as asbestos, lead, and chromium, are stable and do not decay.

Response CMTW-41

See response CMTW-15. Regarding a "sampling strategy," see response CMTW-18.

Response CMTW-42

Respondent’s comment that US EPA’s recommendation that asbestos be managed in place be also applied to lead are noted. As described in Section 5.1.5, Hazards and Human Health (pages

68-71), the project would incorporate activities and programs to ensure compliance with regulatory and LBNL-specific requirements. This includes lead abatement.

Response CMTW-43

Comment noted. Specific disposal sites have not yet been selected.

Response CMTW-44

See response CMTW-38. The commenter did not attach a copy of the newspaper article cited in this comment, and it is unknown whether the opinions cited concern regarding the Proposed Action in particular. 49 CFR 171.2(f)(2) states that "No person shall, by marking or otherwise, represent that - ... A hazardous material is present in a package, container, motor vehicle, rail car, aircraft, or vessel, if the hazardous material is not present." LBNL follows all DOT requirements for the marking, labeling and placarding of hazardous materials in transportation, and would not intentionally violate the provisions of the Federal regulations governing hazardous materials by representing a shipment as hazardous if such shipment did not meet the definition of a hazardous material as specified in 49 CFR. DOT regulations have been promulgated with due consideration to public safety as well as the safety of emergency responders.

Accident data is presented in Section 5.1.10, Traffic and Circulation; see page 84.

Response CMTW-45

Where necessary for containment, debris will be transported in a container designed to contain all material during conditions incident to normal transportation. For large debris such as concrete blocks, large pieces of steel, or large magnets, the typical size and weight of these items preclude safe loading and unloading if a fully enclosed van-type vehicle is used. Covered van-type vehicles are not designed with the necessary tie down devices to adequately restrain a load such as a large concrete block during transportation. Also, both LBNL and the various receiving facilities must use a crane or large fork-lift for unloading at the destination site, which could not be practically or safely used if an enclosed, van-type vehicle was used. Since the majority of debris from the Proposed Action does not contain dispersible radioactivity or hazardous constituents, transportation of all debris in an enclosed vehicle is not warranted. See also response EHS-8 and response CMTW-38.

Response CMTW-46

Section 5.1.1, Air Quality, which addresses air quality impacts from the Proposed Action, found that no reasonably foreseeable significant air impacts would result. The comment does not specify why the description or analysis is deficient or why air quality along the truck route should be monitored, nor provide substantial evidence regarding a significant impact that would result from the Proposed Action.

Response CMTW-47

Comment noted. LBNL has responded to comments received both before and after the public comment period. To date, the City of Berkeley Transportation Commission has not submitted any written comments.

Response CMTW-48

Section 4.2.4, Geology and Soils, discusses active faults in the vicinity, while hydrology in the vicinity is discussed in Section 4.2.6, Hydrology and Water Quality. The only active fault near the Proposed Action site is the Hayward Fault. The comment does not specify why the description or analysis is deficient, why showing all faults (including inactive faults) in the entire watershed is necessary, why it is necessary to discuss the relation of these faults to surface and groundwater transport, or otherwise nor provide substantial evidence regarding a significant impact that would result from the Proposed Action. See also response CMTW-15.

A similar comment (16-16) was made by CMTW in regard to the CMS report ("The Final CMS Report must include a comprehensive earthquake fault map that would include all the faults in the entire Strawberry Creek Watershed, whether active or not, and an interpretation of the significance of the presences of these faults regarding the transport of surface, soil and groundwater within the LBNL site"). A portion of the DTSC response to that comment is applicable here:

> **RESPONSE 16-16** A fault map of the entire Strawberry Creek watershed would cover large areas outside the LBNL site and is outside the scope of the CMS. LBNL provided earthquake fault maps in the RFI Report that include faults that could potentially play a role in the migration of contaminants. There is no evidence that any of these faults act as conduits for contaminant migration.

Response CMTW-49

Hydrology in the vicinity is discussed in Section 4.2.6, Hydrology and Water Quality, which includes a discussion of the various creeks in the vicinity. The comment does not specify why the description or analysis is deficient, why a watershed map is necessary, nor provide substantial evidence regarding a significant impact that would result from the Proposed Action. See also responses CMTW-15 and CMTW-48.

A similar comment (16-17) was made by CMTW in regard to the CMS report ("The Final CMS Report must include a watershed map for the LBNL hill site showing the various watershed and sub-watershed divides with a detail of the Blackberry Creek watershed and the four-acre Bevatron site as well as the Strawberry Creek watershed including the Chicken Creek sub-basin and the East Canyon area above the UC Botanical Garden.") A portion of the DTSC response to that comment is applicable here:

RESPONSE 16-17 Maps showing the boundary between the Blackberry Creek watershed[15] and the Strawberry Canyon watershed (and also showing site creeks and drainage systems) are provided in the module-specific volumes of the RFI Report. This information is provided along with details of the stormwater discharge system to show which offsite creeks (Strawberry or North Fork Strawberry) are the receptors of surface water runoff from the site. The locations of the sub-basins are not relevant to the CMS.

Response CMTW-50

The Proposed Action will not increase landslide hazards, and it is unnecessary to provide a map showing previous landslides, especially landslides in entire watersheds. The Proposed Action involves demolition of a facility that is currently located on a stable geologic unit. Because the facility would be removed and the facility footprint converted to vacant area, the Proposed Action would not cause a condition that would destabilize the underlying geology. Although portions of LBNL property may be within a Seismic Hazard Zone, this zoning does not apply to the Proposed Action because the building site itself is not zoned, and the Proposed Action involves demolition, with no new facility construction.

It is unnecessary to show “all topographic, geological, geotechnical, and subsurface water conditions which indicate a potential for permanent ground displacement.” Lastly, groundwater plumes are discussed in Section 4.2.5. See response CMTW-48. It is unnecessary to show the distribution of groundwater plumes on the entire LBNL site. See response CMTW-15.

Similar comments (9-5, 16-18 and 16-19) were made by Pamela Sihvola and/or CMTW in regard to the CMS report (9-5: "And I would like to read for the record what I read before from a 1949 geologist's report for this site, where the Orinda Formation is used as the foundation for not cleaning up these plumes. The Orinda Formation, and I'm not going to read the whole thing here, the area as available is a four-acre site needs to be X-rayed, this is 1949 before the building was constructed, and leveled off. The bedrock beneath this beveled surface will be comprised of poorly consolidated marine sediments. The Orinda Formation absorbs water freely and a lot of those features that are associated with it are also quite pervious so the whole mass is really saturated in the area adjoining the Lisbon Tract to the east, which is comprised of the same formation as those under consideration, all the Lisbon Tract. They had 68 streams from which they once collected water for the domestic supply of Berkeley in the early days. There appears to have been considerable landsliding in this active area, and the appearance of heavy rainfall, the deep overburden and underlying marine sediment becomes quite soft from the absorbed water, seeps come out of the ground in many places, and even while several inches of rain are falling, this was a stream in 1949." 16-18: "The Final CMS Report must include a Seismic Hazard Zone Map which would show areas in the Strawberry and Blackberry Creek Watersheds where previous landslides have occurred, as well as all topographic, geological, geotechnical, and subsurface conditions which indicate a potential for permanent ground displacement." 16-19: "It

[15] LBNL note: As stated in Section 4.2.6, Blackberry Canyon is in the North Fork of Strawberry Creek watershed. Blackberry Canyon is drained by the North Fork of Strawberry Creek and Strawberry Canyon is drained by the South Fork of Strawberry Creek.

should be noted that in a 1949 geologist (c. Marliave) report on the bedrock conditions at the Bevatron site "…the area at the Bevatron is to be excavated and leveled off to elevation 710. The bedrock beneath this beveled surface will be comprised of poorly consolidated Orinda sediments…The Orinda Formation absorbs water freely and the lava flows and breccia that are associated with it are also quite pervious so that the whole mass becomes readily saturated… There appears to have been considerable land sliding in the amphitheatre in which the Bevatron is to be located – and during periods of heavy rainfall, the underlying Orinda sediments become quite soft from absorbed water … seeps come out of the ground in many place, there are two known permanent springs in the area where tunnels have been driven into the hillside and pipes leading out from the caved entrances have been flowing water for many years" (Attachment 12). Further, though landsliding deposits may have been modified or have fill placed over them their subsurface characteristics /failure planes may exert control on groundwater flow patterns and thus on the movement contaminant plumes at the hill site. Mapping of the historical landslide distribution in the Final CMS Report is extremely important for understanding/interpreting how the contaminant plumes may be distributed on the hill."). Portions of the DTSC responses to those comments are applicable here:

RESPONSE 9-5 ...The CMS Report notes that rocks of the Orinda Formation have low permeability values with the exception of a few areas where permeability is relatively high apparently due to the local presence of coarse-grained strata. The hydraulic conductivity (permeability) of the saturated portion of the Orinda Formation at LBNL has been extensively tested in numerous locations by hydraulic testing and yield testing of monitoring wells. The results of these tests are documented in the RFI and CMS report.

RESPONSE 16-18 ...a map depicting both prior landslides and areas susceptible to future landslides is presented in the RFI Report. This map is based on a synthesis of topographic, geologic, geotechnical, and hydrogeologic data.

RESPONSE 16-19 Slope stability analyses and extensive engineering of cut-and-fill operations have been an integral part of development of LBNL facilities, particularly large facilities such as the Bevatron. This work has included extensive mapping, drilling, and logging of soil borings, and geotechnical testing of soil samples. Much of these data were used for preparation of geologic maps and cross sections presented in the RFI and CMS reports. The 1949 report by Marliave documents conditions that were present prior to preparation and placement of engineered fill at the Bevatron site, not current conditions.

Geologic maps showing the distribution of historically active landslides and paleolandslides are included in the RFI Report and Appendix I in the CMS Report. The subsurface distribution and hydrogeologic properties of bedrock units and surficial geologic units (including landslide deposits) and the relation of these units to contamination plume locations are discussed in the RFI and CMS Reports, and were a primary consideration in the assessment of the fate and transport of groundwater contaminants and siting of groundwater monitoring wells. Groundwater monitoring wells are located in the downslope area of a number of the slide deposits that intersect contaminated groundwater. Based on the logging

of the borings for the wells and the groundwater sampling data, there is no evidence that former landslide slip planes are a preferential pathway for contaminant migration.

A portion of DTSC response 16-8 also is relevant:

RESPONSE 16-8 Detailed information on areas of slope instability is provided in the RFI Report. Figure 4.2-7 in the RFI Report includes the locations of recent landslide deposits mapped by Harding-Lawson Associates (1982). The RFI Report also contains a landslide hazard map (Figure 4.2-8) showing areas that are considered to have a risk of landslide movement. These areas include both known historical landslide deposits (generally classified as high risk) and areas where landslides have not occurred, but that are known or suspected to be susceptible to landsliding.

Response CMTW-51

See response CMTW-50.

Response CMTW-52

A similar comment (16-20) was made by CMTW in regard to the CMS report ("The Final CMS Report must include the current configuration and condition of the engineered drainage around the Bevatron site. How is groundwater from the seeps and springs intercepted and captured? Where are water source diverted? Do creek beds of the historic creek function as conduits for these waters? According to the 1875 F. Soule Map titled: Strawberry Valley and Vicinity Showing the Natural Sources of the Water Supply of the University of California, at least two of the branches of the North Fork of Strawberry Creek were located directly under the Bevatron Complex. The Final CMS Report should provide a historic map of the site showing these watercourses and their current state."). A portion of the DTSC response to that comment is applicable here:

RESPONSE 16-20 ...the RFI Report provides site-wide maps showing the principal stormwater drainage systems and stream courses. The stormwater drainage systems connect to various smaller building subdrain systems within the buildings of the Bevatron Complex. Building subdrains that intercept clean groundwater discharge to the storm drain system that drains to the creeks. Building subdrains that intercept contaminated groundwater (including a portion of the Building 51 subdrain system) are routed to on-site groundwater treatment systems. Segments of several creek beds (including part of North Fork Strawberry Creek), were culverted during construction of the facility.

A number of groundwater monitoring wells has been installed in former creek bed locations in several of the historic creeks to evaluate whether they function as conduits for contaminant migration. These include North Fork Strawberry Creek and some of its tributaries and Chicken Creek. At some locations the historic creek beds appear to be preferential flow paths, while at others they do not. Groundwater contaminant flow paths are discussed in the Draft CMS Report.

> The RFI Report contains detailed maps of both the original topography and current topography of the Bevatron Complex that illustrate the locations of former drainage courses beneath those buildings. Geologic cross sections in the RFI Report and Appendix I of the CMS Report show the geometry of artificial fill that has been placed in these drainages.

Response CMTW-53

In regard to allowing radioactivity to decay in place, see response CMTW-40.

Alternatives to demolition, including the No Action Alternative and an alternative to encase the facility as a central courtyard feature, are discussed in Chapter V, Alternatives. As discussed in that chapter, these alternatives would not achieve the goals of the Proposed Action, as well as possessing other disadvantages. For example, the encasing/central courtyard alternative would require major upgrades to the building and entail significant additional costs.

It should also be noted that in earlier comments to Berkeley Lab, CMTW supported the dismantling of Building 51, in contradiction to its present stance. In its July 17, 2003 written comments opposing the Laboratory's proposed Building 49 Proposed Action, CMTW stated the following:

> The Lawrence Berkeley National Laboratory has several acres of re-usable land, on which huge decommissioned facilities are waiting for clean-up. These sites include the Bevatron Accelerator, Building 51 [and two other buildings], some of which have already been standing idle for over a decade. We are requesting a commitment from Department of Energy and LBNL for a time-line for the comprehensive clean-up of these contaminated sites to facilitate their potential re-use, prior to undertaking any new development on any of the remaining pristine, unused, i.e. new open space lands at LBNL in the Strawberry creek Watershed. The Lab must prepare an EIR under CEQA and an EIS under NEPA for the dismantling of these facilities, the hauling/shipping of resulting radioactive/hazardous debris and for the final disposition of those materials and the contaminated soil/vegetation that will be removed from the sites as a result of the clean-up process.[16]

The Historic American Engineering Record (HAER) addendum has been completed and was accepted by NPS in August 2006. The DOE does not intend to include the addendum in the EA due to its size and bulk. However, the National Park Service letter accepting the HAER is included in the EA as Appendix I.

Response CMTW-54

It is not necessary for the Department of Energy to prepare an additional Memorandum of Agreement (MOA). The MOA is adequate per federal guidelines.

Response CMTW-55

[16] See Appendix B, page B-135, of the *Construction and Operation of the Building 49 Project Draft Environmental Impact Report*, September 2003 (SCH No. 2003062097).

Comment expresses respondent's proposal that LBNL declare an International Architectural Competition to design and restore the Bevatron and is noted.

From: A and MC [mailto:foggy247@earthlink.net]
Sent: Monday, May 22, 2006 9:15 PM
To: CESchwab@lbl.gov
Subject: Bevatron disposal plan

Hello.

I have only recently heard of the plan to dispose of the Bevatron. I am presenting a point of view against such a plan. My point of view is most likely one you've already heard of, but just in case it has not been presented, here it is in brief with all due humility.

I received from UC Berkeley both my B.A., Physics, in 1957, and the Ph.D., Physics, in 1961. I did my graduate work in experimental atomic beam spectroscopy under Professor William Nierenberg who was a student of Professor I. I. Rabi at Columbia University. My experiments were conducted at the Lawrence Berkeley Laboratory, then also referred to as "The Hill", with an atomic beam machine constructed by Professor Nierenberg's team and located in a laboratory in the Chemistry Building. The experiments were conducted from 1958 to 1960 and with the collaboration of Ingvar Lindgren who was visiting from Uppsala University in Sweden where he had just completed his Ph.D. dissertation in the same field. That he chose to work with me on the rare-earth (lanthanide) series was most opportune in that we successfully measured electronic and nuclear ground-state spins of thirteen rare-earth elements. Our work completed the understanding of the electronic structure of the rare-earth series of elements of the periodic table. Professor Lindgren (Chalmers University of Technology and Goteborg University) also was member and chairman of the Nobel Prize Committee for Physics, 1978-91, and Director of the Swedish Foundation for Strategic Research in Science, Technology and Medicine, 1994-98.

My point of view about the Bevatron is the following. The Bevatron is obviously the direct descendant of Ernest O. Lawrence's cyclotron at LBL that helped initiate high-energy particle physics research worldwide. I see the Bevatron as midpoint between the cyclotron and the immense particle machines that followed. The transition was from small group experimental and theoretical research to large group team research with members numbering in the hundreds. I would surmise that the Bevatron was home to hundreds of experimental and theoretical nuclear physicists from the U.S. and worldwide. The Bevatron made possible numerous important discoveries in nuclear physics and as such deserves to be preserved as part of particle physics history. The site of the Bevatron at Lawrence Berkeley Laboratory now stands as a one of a kind

AYC-1

AYC-2

monument as part of the glory of physics at the University of California and the nation as a whole. It would be a shame to lose such a treasure. AYC-2 cont.

Most respectfully,

Amado Y. Cabezas, Ph.d. Physics, 1961, UC Berkeley

Amado Y. Cabezas, May 22, 2006[17] (Comments Identified as "AYC-1 and AYC-2")

Response AYC-1

Comment noted. Proposed Action impacts to cultural resources would be reduced by Historic American Engineering Record (HAER) and Historic American Building Survey (HABS) documentation. In addition, LBNL plans to commemorate the scientific achievements attributed to the Bevatron with a monument and/or a display listing the historic discoveries that occurred there.

Response AYC-2

Comment noted. As described in Section 3.0, Description of Proposed Action and Alternatives, without extensive and costly modifications, the building would not be suitable for reuse in the manner suggested in the comment, and such reuse would not meet the objectives of the Proposed Action. The facility does not meet current building codes, the roof leaks in several locations, and portions of the structure do not comply with current seismic design standards. In addition, as described in Section 4.2.5, Hazards and Human Health, various types of hazardous materials are present in Building 51, such as asbestos, lead, and chromium.

[17] Email date

Comment Letter CBPDD

RECEIVED

JUN 23 2006

BERKELEY SITE OFFICE

CITY OF BERKELEY

Planning and Development Department

June 21, 2006

Mr. Carl Schwab
U.S. Department of Energy, Berkeley Site Office
MS 90R 1023
One Cyclontron Road
Berkeley, CA 94720

Dear Mr. Schwab:

Attached is a report from the Chair of the Community Health Commission (CHC) to the Berkeley City Council documenting the actions taken by the CHC at its meeting of May 11, 2006, regarding the Draft Environmental Assessment for the Demolition of the Lab's Building 51 and the Bevatron. This action is recorded in the draft minutes of the meeting, which are subject to approval by the full Commission at its next regular meeting.

Unfortunately, the CHC comments were not transmitted to the City Council in time to be sent to you prior to the end of the comment period for the DEA. We hope you will consider these comments during your completion of environmental analysis for the project. Thank you.

Sincerely,

Wendy Cosin
Deputy Planning Director

Cc:
Peggy Gibbons, Deputy Health Department Director
Arrietta Chakos, Assistant City Manager
Terry Powell, LBNL

2118 Milvia Street, 3rd Floor Berkeley, CA 94704 Tel: 510.981-7400 Fax: 510 981-7470 TDD:510 981-7474
E-mail: planning@ci.berkeley.ca.us

- Approximately 4,700 truck trips will occur during this demolition. A single route (Hearst – Shattuck – University Ave.) for the round-trips will be used. During that period, it is possible that major construction will take place at the Ashby interchange at I-80.
- Other construction that is planned or on-going at LBNL, UC Berkeley, and the City of Berkeley (DEA, pp 86-89) are described, but their impacts are not aggregated in the DEA.

2. The DEA states that the "future use of the site is speculative, it is not described in this Environmental Assessment, nor are the impacts of such use evaluated" (DEA, p. 7), however, the 2006 LBNL Long Range Development Plan (LRDP) and its accompanying LRDP EIR will be circulated later this year for review and may described a possible future use for the site (DEA, p. 7)

3. The DEA acknowledges that the demolition activities are subject to Federal and State regulation. Federal regulations, especially over the past 6 years, have been consistently relaxed and frequently unenforced. Not surprisingly, the community may not feel confident that reliance on federal regulation will do much to ensure that their health is protected.

4. The City of Berkeley has recently passed a Precautionary Principle Ordinance which states that the City, in areas of policy defined by the ordinance, will:

   Examine a full range of alternatives and select the alternative with the least potential impact on health and the environment including the alternative of doing nothing.

   Although the issue that is the subject of our recommendation to the City Council is not defined in the Ordinance, it is nevertheless the belief of the CHC that precautionary considerations should be part of the City Council's evaluation process.

B. The Community Health Commission approved the following recommendations to the City Council:

1. Request that plans for the demolition of Building 51 and the Bevatron not be finalized until the public has the opportunity to review and comment on LBNL's Long Range Development Plan due out later this year. CBPDD-1

2. Establish air monitoring equipment along the truck travel routes that can be accessed in real time by the community via the internet. Elements to monitor include criteria pollutants (the federal Clean Air Act, and the EPA identify and set standards to protect human health and welfare for six pollutants: ozone, carbon monoxide, particulate matter [PM10], sulfur dioxide, lead, and nitrogen oxide) as well as PM2.5 and asbestos. Doing so will assure the community that they are not being exposed to harmful contaminants as they have assured in the DEA. An air monitoring system can also be used by researchers looking at air quality issues. A memorandum written by Commissioner Kahn that provides more explanation on why air quality should be monitored is attached. CBPDD-2

Water quality and noise levels in and around the demolition site should be similarly monitored and reported. CBPDD-3

3. Determine if CalTrans plans any major work on the I-80 between Powell and Buchanan Streets over the next 7 years that might exacerbate the projected traffic and air quality conditions throughout the City. CBPDD-4

4. Request assurance that, should the demolition go forward, it be concluded in four years or less reducing the impacts on the neighborhoods close to the demolition site and reducing the possibility that an unfinished demolition site will increase exposures to hazardous materials. CBPDD-5

5. Should the demolition go forward, all trucks that are used for the transportation of rubble should be spot checked for safety and its diesel fuel for adherence to the federal government's latest regulations which go into effect in September 2006. CBPDD-6

6. There has been some community opposition to the Clive, Utah waste disposal site by people living in the area. The City of Berkeley should make the Clive community aware of the proposed disposal of hazardous material and be certain that we are not shipping hazardous waste to a community that is opposed to receiving it. CBPDD-7

POSSIBLE FUTURE ACTION

The CHC acknowledges that it does not have enough information or the capacity to fully evaluate and compare the potential health risks associated with either the demolition of the buildings or leaving the buildings intact. It is therefore the recommendation of the CHC that no action be taken by the University and/or LBNL on Building 51 and the Bevatron – in effect leaving the buildings intact since no action appears to be the least harmful action.

FISCAL IMPACTS OF POSSIBLE FUTURE ACTION

Unknown

Attachment: Memorandum by Commissioner Stanley Kahn

ATTACHMENT

Air Quality and the Demolition of the Bevatron

Extensive discussion of the above topic has been made available by UC Berkeley in a Draft EIR (Environmental Impact Report) in a sixteen page document. I have read it over several times, and find it very difficult to summarize in a few sentences.

There are, however, a number of points to be made.

1. The demolition of Building 51 will require removal of the waste material resulting from the demolition by Diesel powered truck transport, through the City of Berkeley, over major thoroughfares, over an estimated time period of at least fours years or more. CBPDD-8

2. In addition to the potential pollution of the ambient air in Berkeley, both at the demolition site as well as in the vicinity of the truck route, by asbestos particles, particulate matter of various sizes, and chemical pollutants of a wide variety, a major consideration is also tailpipe pollution from Diesel powered trucks. Indeed, the EIR appears to regard this as a more important source of pollution than that of the material carried in the trucks. Furthermore, it is well known that carbon monoxide is a deadly gas produced by automotive exhaust. CO poisons the Hemoglobin carrying of Oxygen to the tissues. CBPDD-9

3. Insofar as measurement of the impact of the demolition process and truck transport is concerned, current facilities for potential measurement of air quality are totally inadequate. **The nearest air pollution measuring facility is the Alice Street Facility, in Oakland, six miles south of the project.** Ozone and carbon monoxide are the primary pollutants measured there. However, **the nearest specific particulate measuring facility is in Fremont, 30 miles southeast of the project site!** CBPDD-10

4. Insofar as demolition site protection is concerned, the sides of the building will not be demolished until all the material inside the building has been removed as a protective measure. Although a variety of "mitigation measures" are proposed by the Berkeley Lab, including frequent wetting down of the demolition site, protection of the aggregate material on trucks by a six-inch freeboard or covering of the cargo, **there is no plan to measure the impact of the entire process by any new special monitoring facilities!** CBPDD-11

5. The draft document discusses at great length the various Federal and State Rules and Regulations, including, of course those of the EPA. There are apparently none existent for the City of Berkeley. The fact that the San Francisco Bay Area Basin, as I interpret the EIR, is a non-attainment area at least for ozone, is a source of concern. The Laboratory evidently plans to keep well within those regulations. CBPDD-12

6. Particulate matter, which is classified in two different sizes, appears to be a major hazard of Diesel tailpipe exhaust. Inhalation of these particles is potentially injurious to humans, especially those with chronic lung and cardiac disorders. I need not emphasize the dangers of inhaled asbestos as a potential carcinogen. CBPDD-13

7. It would appear to me, as a resident of Berkeley, that the demolition project should be very carefully reviewed by the City Council, that an impartial expert in industrial Toxicology be consulted by the Council for third party advice in order to minimize the potential dangers this Demolition project might impact on our citizenry, as well as recommendations for careful monitoring of ambient air in the vicinity of the truck route. CBPDD-14

8. It is not clear to me from the EIR whether there is any possibility of pollution by radioactive material, either at the demolition site or along the truck route. CBPDD-15

Stanley Kahn
Community Health Commission

Wendy Cosin, Deputy Planning Director, City of Berkeley Planning and Development Department, June 21, 2006 (Comments Identified as "CBPDD-1 through CBPDD-15")

Comments from Wendy Cosin were received after the close of the public comment period on the Draft EA; however these comments are pertinent to the Proposed Action.

Identical comments were previously submitted by the City of Berkeley Environmental Health Subcommittee to the Community Health Commission and responses to them are included above (see responses EHS-4 through EHS-17).

Landmarks Preservation Committee
Berkeley, CA
Attn: Robert Johnson, Chairman

Dear Commissioners,

My name is Jim Cunningham. I am a Berkeley resident since 1968 and was a professor at the University of California for many years. It is a great university and deserves our respect and admiration for many reasons.

The University is going through a very difficult time financially, as is, of course, the state of California. The expansion and building projects being proposed are enormous and are being funded in large part by private donations. If you read the article in the Daily Planet on the EIR for the new stadium complex you realize quickly that that part of the city will be gone and the neighborhoods surrounding it will be gone. Berkeley will change.

I am, however, writing these words concerning the vote on the preservation of the Bevatron. I realize that your committee does not just look at the building to be preserved but looks at the neighborhood and the people who live in the neighborhood. I was very pleased at the last meeting when two committee members expressed their great concern that the solution to the problem with the reconstruction of the private home was being decided without the inclusion of those who live there, the people. The "people" were the ones who brought the problem to the attention of the committee. The attitude of involving those who live in the area must always be kept. JC-1

The Bevatron must be kept in place. It can be made into a truly outstanding architectural and educational institution. It can be, and should be, another Hall of Science. No one wants to discuss the horrendous effects, from a health point of view, connected with the tearing down of this structure. If this is done and the materials, described as "slightly radioactive", are carted through the streets of Berkeley, truckload-by-truckload, then again the losers would be the people and citizens of Berkeley. JC-2

Sincerely,

Jim Cunningham (Comments Identified as "JC-1 and JC-2")

Response JC-1

Comment noted. Cultural resources impacts are analyzed in Section 5.1.3, Cultural Resources. See response LAW-1, 2, 3, above.

Response JC-2

Major and costly modifications to Building 51 would be necessary in order for it to be used for the architectural and educational purposes suggested by the commenter. As described in Chapter III, Proposed Action Description, the facility does not meet current building codes, the roof leaks in several locations, and portions of the structure do not comply with current seismic design standards. In addition, as described in Chapter 4, Section 4.2.5, Hazards and Hazardous Materials, various types of hazardous materials are present at Building 51. In particular, portions of the facility are radiation controlled areas, and are inaccessible to the general public.