Finding of No Significant Impact
for the
National Pollutant Discharge Elimination System
Wastewater Compliance Alternatives
at the
Savannah River Site

Agency: U.S. Department of Energy

Action: Finding of No Significant Impact and Floodplain Statement of Findings

Summary: The Department of Energy (DOE) has prepared an environmental assessment (EA) (DOE/EA-1513) to evaluate the potential environmental impacts associated with the implementation of proposed and alternative actions to achieve permit compliance at selected industrial wastewater outfalls at the Savannah River Site (SRS). Based on the analyses in the EA, DOE has determined that the proposed actions are not major Federal actions significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act (NEPA) of 1969. Therefore, the preparation of an environmental impact statement (EIS) is not required, and DOE is issuing this Finding of No Significant Impact (FONSI) and Floodplain Statement of Findings.

Public Availability: Copies of the EA and FONSI or further information on the DOE NEPA process are available from:

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Background: On December 1, 2003, the South Carolina Department of Health and Environmental Control (SCDHEC) renewed SRS's National Pollutant Discharge Elimination System (NPDES) permit #SC0000175. This permit authorizes the continued discharge of industrial wastewater effluents into State surface waters for the next five years. Effluent monitoring data indicates that 10 of the 25 permitted SRS industrial wastewater outfalls may not presently meet the extremely low heavy metals limits imposed by the new permit. These outfalls are A-11, F-01, F-02, F-05, F-08, H-02, H-04, H-08, H-12, and S-04. Interim compliance schedules for these outfalls have been negotiated with SCDHEC to allow DOE sufficient time to develop and implement technically feasible, cost-effective compliance options. Toward this end, a total of 35 proposed and alternative actions have been identified to ensure timely compliance with the new NPDES permit requirements.

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Purpose and Need for Agency Action: Ten industrial wastewater outfalls have been identified at SRS which may not presently meet the new NPDES permit requirements. The purpose of the proposed and alternative actions is to ensure that these outfalls are brought into timely compliance with the new permit requirements in a technically reliable, environmentally sensitive, cost-effective manner. The need is for DOE to achieve and maintain regulatory compliance with the renewed SRS NPDES industrial wastewater permit.

Proposed Actions: Following are outfall-specific descriptions of proposed actions reviewed within the EA:

Outfall A-11: This outfall currently receives 12 contributing waste streams and discharges to an ephemeral tributary of Tim's Branch. The proposed action is to eliminate two contributing streams (by source elimination) and reroute three other contributing streams to Outfall A-01 for treatment in the existing constructed wetlands. The constituents of concern (heavy metals) would be removed in the wetlands. The remaining waste flows (seven contributing streams) would continue to discharge through the existing outfall. The scheduled compliance date is December 1, 2007. Following implementation of the proposed action, Outfall A-11 would be reclassified as a storm water outfall.

Outfall F-01: This outfall currently receives six contributing waste streams and discharges to an ephemeral tributary of Upper Three Runs. The proposed action is to eliminate five contributing streams through ongoing deactivation of F-Area facilities. The one remaining contributing stream would continue to discharge through the existing outfall. The scheduled compliance date is December 1, 2006. Following implementation of the proposed action, Outfall F-01 would be reclassified as a storm water outfall.

Outfall F-02: This outfall presently receives 13 contributing waste streams and discharges to an ephemeral tributary of Upper Three Runs. The proposed action is to eliminate five contributing streams through ongoing deactivation of F-Area facilities. Additionally, six contributing streams would be diverted to the Central Sanitary Waste Treatment Facility (CSWTF) for treatment. The constituents of concern would be treated in the CSWTF. The remaining waste flows (two contributing streams) would continue to discharge through the existing outfall. The scheduled compliance date is December 1, 2006. Following implementation of the proposed action, Outfall F-02 would be reclassified as a storm water outfall.

Outfall F-05: This outfall currently receives six contributing waste streams and discharges to a perennial tributary of Upper Three Runs. The proposed action includes relocating the outfall downstream of a retention basin (Pond 400), which is to be built in support of the future mixed oxide fuel fabrication facility (MOX) mission. All six wastewater influents would be diverted through the retention basin prior to their discharge through the relocated outfall. Under the proposed action, Outfall F-05 would remain a NPDES wastewater outfall. There is a compliance schedule risk associated with this proposed action due to its dependence upon the MOX project for construction of the

retention basin. Any delays with respect to the retention basin could result in Outfall F-05 not meeting its scheduled compliance date (December 1, 2006). Should the timely construction of Pond 400 become problematic, an alternative to the proposed action may need to be employed to ensure that regulatory compliance is achieved (see discussion of alternative actions).

Outfall F-08: This outfall currently receives 16 contributing waste streams and discharges to a perennial tributary of Fourmile Branch. The proposed action includes relocating the outfall approximately 455 meters (1500 feet) downstream of its present location in the F-08 discharge trench. All contributing waste streams would continue to discharge through the relocated outfall. DOE anticipates that the increased exposure of the effluent stream to channel bottom sediments would reduce the pollutant loading, but there is no certainty that effluent limits would be achieved. Should the proposed action not perform as anticipated, there would be sufficient time to implement an alternative action (see discussion of alternative actions) before the scheduled compliance date (November 1, 2008). Under this proposed action, Outfall F-08 would remain a NPDES wastewater outfall.

Outfall H-02: This outfall presently receives 22 contributing waste streams and discharges to a perennial tributary of Upper Three Runs. The proposed action includes expanding the existing retention basin and constructing a wetlands treatment facility upstream of the existing outfall. All contributing waste streams would be routed through the expanded retention basin and wetlands treatment facility prior to their discharge through the existing outfall. The constituents of concern would be removed in the wetlands. Implementation of this proposed action would also require completion of a successful Water Effects Ratio (WER) to petition the State for less stringent permit effluent limits. The scheduled compliance date is December 1, 2008. Under the proposed action, Outfall H-02 would remain a NPDES wastewater outfall.

Outfall H-04: This outfall presently receives six contributing waste streams and discharges to an ephemeral tributary of Upper Three Runs. The proposed action includes eliminating one contributing waste stream by routing it through a coated pipeline (to prevent leaching of metals) to French drains. Another contributing waste stream would be diverted to the CSWTF for treatment. The remaining waste flows (four contributing streams) would continue to be discharged through the existing outfall. The scheduled compliance date is December 1, 2006. Following implementation of the proposed action, Outfall H-04 would be reclassified as a storm water outfall.

Outfall H-08: This outfall currently receives 17 contributing waste streams and discharges to an ephemeral tributary of Fourmile Branch. The proposed action includes eliminating four contributing waste streams by recycling or source elimination and diverting five contributing waste streams to Outfall H-12 for discharge. In addition, four contributing waste streams would be routed to the 288 H Ash Basin. The remaining waste flows (four contributing waste streams) would continue to be discharged through the existing outfall. The scheduled compliance date is December 1, 2007. Following

implementation of the proposed action, Outfall H-08 would be reclassified as a storm water outfall.

Outfall H-12: This outfall receives 12 contributing waste streams and discharges to a perennial tributary of Fourmile Branch. The proposed action includes relocating the outfall downstream of its present location and installing a peat bed for side-stream treatment of influent flows. The constituents of concern (e.g., copper and zinc) would be removed in the peat bed. Implementation of this proposed action would also require completion of a successful WER to petition the State for less stringent permit effluent limits. The scheduled compliance date is November 1, 2008. Should the peat bed technology not perform as anticipated, there would be sufficient time to implement an alternative action (see discussion of alternative actions). Under the proposed action, Outfall H-12 would remain a NPDES wastewater outfall.

Outfall S-04: This outfall receives four contributing waste streams and discharges to an ephemeral tributary of Upper Three Runs. The proposed action is to eliminate the outfall by diverting all contributing waste streams to the CSWTF for treatment. The scheduled compliance date is December 1, 2008.

Alternative Actions: In accordance with NEPA regulations, DOE examined alternatives to the proposed actions, including the "No Action" alternative. With the exception of Outfall F-01, multiple alternative actions were evaluated for each outfall. This approach allows DOE flexibility should changing circumstances result in the proposed action for any given outfall no longer being the most desirable. Alternative actions for each outfall were ranked, the most preferable being designated as the primary alternative to the proposed action. Following are outfall-specific descriptions of primary alternative actions reviewed within the EA:

Outfall A-11: The primary alternative action is to eliminate five contributing waste streams by source elimination, routing to a service water tank, or diversion to CSWTF for treatment. The remaining waste flows (seven contributing streams) would continue to be discharged through the existing outfall. Following implementation of this alternative action, Outfall A-11 would be reclassified as a storm water outfall.

Outfall F-01: No alternative action was identified for this outfall.

Outfall F-02: The primary alternative action is to eliminate seven contributing waste streams by source elimination or diversion. Six contributing waste streams would continue to be discharged through the existing outfall. Following implementation of this alternative action, Outfall F-02 would be reclassified as a storm water outfall.

Outfall F-05: The primary alternative action is to eliminate three contributing waste streams by source elimination or diversion to French drains. A back-up treatment alternative for the French drains would be to route contributing waste streams to CSWTF. Three contributing waste streams would continue to be discharged through the existing

outfall. Following implementation of this alternative action, Outfall F-05 would be reclassified as a storm water outfall.

Outfall F-08: The primary alternative action is to eliminate ten contributing waste streams by source elimination or routing to CSWTF or the small Effluent Treatment Project (ETP) basin for treatment. Six contributing waste streams would continue to be discharged through the existing outfall. Under this alternative action, Outfall F-08 would remain a NPDES wastewater outfall.

Outfall H-02: The primary alternative action is to eliminate 18 contributing waste streams by recycling or routing to ETP, CSWTF, or French drains for treatment. Four contributing waste streams would continue to be discharged through the existing outfall. Following implementation of this alternative action, Outfall H-02 would be reclassified as a storm water outfall.

Outfall H-04: The primary alternative action is to eliminate two contributing waste streams by routing to ETP or French drains for treatment. Four contributing waste streams would continue to be discharged through the existing outfall. Following implementation of this alternative action, Outfall H-04 would be reclassified as a storm water outfall.

Outfall H-08: The primary alternative action is to eliminate 13 contributing waste streams by source elimination, recycling, diversion to Ash Basin 288-H for treatment, or routing to Outfall H-12 for discharge. Four contributing waste streams would continue to be discharged through the existing outfall. Following implementation of this alternative action, Outfall H-08 would be reclassified as a storm water outfall.

Outfall H-12: The primary alternative action is to eliminate seven contributing waste streams by recycling or routing to ETP or CSWTF for treatment. Five contributing waste streams would continue to be discharged through the existing outfall. Under this alternative action, Outfall H-12 would remain a NPDES wastewater outfall.

Outfall S-04: The primary alternative action is to install a peat bed to treat all contributing waste streams prior to their discharge through the existing outfall. Under this alternative action, Outfall S-04 would remain a NPDES wastewater outfall.

The "No Action" alternative would consist of DOE continuing to discharge from the outfalls with no changes in effluent quality other than that which would result from the elimination of contributing waste streams due to the deactivation of F-Area facilities. If no action is taken, DOE may not be in compliance with the requirements of the NPDES wastewater permit.

Environmental Impacts: The scope of the EA encompasses 35 proposed and alternative actions. A number of these actions involve the diversion of contributing waste streams to CSWTF and/or ETP for treatment and final disposition. The impacts associated with the utilization of these facilities would be negligible and bounded by previous NEPA

reviews. Many of the proposed outfall projects would also involve construction-related and soil disturbing activities within previously disturbed areas (e.g., constructing lift stations, laying pipe for facility tie-ins, etc.). These activities would be short-lived, cause minimal disruption to facility or area operations, and be conducted using best management practices. Air emissions associated with these activities (e.g., equipment emissions, fugitive dust) would be minimal and not require permitting. Therefore, the potential for these activities to significantly impact the human environmental (e.g., air, aquatic and terrestrial resources, biota) would be negligible. Many of the proposed and alternative actions would occur in areas previously subjected to extensive land alterations, timber operations, or modern construction activities. The potential for significantly impacting archaeological or cultural resources in these areas would be negligible. None of the proposed or primary alternative actions are expected to have measurable impacts on threatened and endangered species, migratory avian species, or floodplain/wetland resources.

Impacts to worker health and safety would be negligible due to the use of personal protective clothing and equipment and enforcement of Occupational Safety and Health Administration (OSHA) compliant work conditions. With the possible exception of water quality, any impacts associated with the proposed outfall projects would be limited to specific geographic areas within SRS and not be evidenced beyond the site boundary. Therefore, the potential for impacting offsite public health and safety or engendering environmental justice issues would be negligible. Workforce requirements and costs associated with the proposed outfall projects are minimal compared to the total SRS budget and employment, so the potential for significant socioeconomic impacts within the SRS region-of-influence would also be negligible.

Certain alternative actions for Outfalls F-08 and H-02 would involve construction activities (e.g., burying pipeline) in previously undeveloped areas within the 100-year floodplain, portions of which include jurisdictional wetlands. In the case of Outfall F-08, there are also areas of contaminated soils. These alternative actions would also involve piping effluent directly from the outfalls to the receiving streams (Fourmile Branch and Upper Three Runs, respectively), effectively bypassing the intervening wetlands. Review of these alternative actions find them to be problematic due to the potential for adversely impacting wetland resources, floodplain hydrology, and/or disturbing contaminated soils. Prior to implementing these alternative actions, wetland mitigation measures would need to be developed, associated permitting issues resolved, and this FONSI revisited. However, these options are not proposed or primary alternative actions and DOE has not chosen to implement them.

Successful implementation of the proposed or primary alternative actions would result in reduced pollutant loading to receiving streams and, therefore, an overall improvement in surface water quality. In some instances, project implementation would also result in a number of outfalls being reclassified as storm water outfalls. This reclassification would be applicable where outfall effluents consisted only of industrial storm water and/or non-process related discharges (e.g., parking lot runoff, unpolluted air conditioning condensate). These storm water discharges would be in compliance with the existing

South Carolina NPDES storm water general permit and represent reduced pollutant loadings to State waters (i.e., improved water quality). The reclassification of these outfalls from industrial wastewater to storm water outfalls would not adversely impact the human environment.

DOE has decided to implement the proposed actions described in DOE/EA-1513 to achieve permit compliance at the industrial wastewater outfalls at SRS which may not presently meet the new NPDES wastewater permit requirements. A possible exception to this decision is Outfall F-05 where the successful implementation of the proposed action is dependent upon the construction of a retention basin (Pond 400) by the MOX project. If the timely construction of this basin becomes problematic, the primary alternative action for Outfall F-05 will be implemented to achieve permit compliance.

Floodplain Statement of Findings: This is a Floodplain Statement of Findings prepared in accordance with 10 CFR Part 1022. A Notice of Floodplain and Wetlands Involvement was published on February 18, 2005, and a floodplain and wetlands assessment was incorporated in the EA. No floodplain or wetland impacts are expected for the proposed or primary alternative actions considered within the scope of this EA. DOE will allow 15 days of public review after publication of this statement of findings before implementing the proposed outfall projects.

Determination: Based upon the information and analyses in the EA (DOE/EA-1513), DOE has determined that the proposed NPDES wastewater compliance alternatives do not constitute major Federal actions which significantly affect the quality of the human environment within the meaning of NEPA. Therefore, an EIS is not required and DOE is issuing this FONSI.

Signed in Aiken, South Carolina, this 12th day of April, 2005.

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