CATEGORICAL EXCLUSION FOR 331 BUILDING IRRIGATION UPGRADES, 300 AREA, HANFORD SITE, RICHLAND, WASHINGTON

Proposed Action: The U.S. Department of Energy (DOE), Pacific Northwest Site Office (PNSO) proposes to upgrade a landscaping irrigation system in the 300 Area.

Location of Action: In the landscaped area around the 331 Building, Hanford Site

Description of the Proposed Action: The proposed action is to upgrade the existing 331 Building landscaping irrigation system by using nearby aquaculture effluent instead of potable water. Currently, 331 aquaculture research activities use a mixture of Columbia River water and groundwater in a single-pass, flow-through system used to raise and maintain fish. This proposal would divert a portion of the aquaculture effluent that is on its way back to the river for discharge. The system would be "on-demand" and would only withdraw water as needed for irrigation. Any remaining aquaculture water not used for irrigation would continue to be discharged to the river. The project would result in a conservation of resources and is estimated to eliminate the use of about 6,000,000 gallons of potable City of Richland water each year for irrigation. Sub-metering would be installed to quantify the annual potable water savings.

The proposal would require the following activities:

- disconnect irrigation piping from the potable system at points of connection
- remove selected components
- install a connection to the 331 aquaculture river outfall system
- install new piping, reservoir, pump, variable speed drive, pump pressure controls, metering, valves, thrust restraint, electrical connections, and controls, including a "smart" irrigation controller.

A number of environmental permitting issues are pertinent to this proposal, including the following factors:

- Current use of Columbia River water for aquaculture research use at the 331 Building is grandfathered under a water right issued to DOE.
- Aquaculture effluent discharged to the river falls below threshold values in 40 CFR 122 and does not require National Pollutant Discharge Elimination System permitting. An annual self-assessment is performed for 331 Building aquaculture activities to verify this status. The U.S. Environmental Protection Agency (EPA) has concurred that these aquaculture activities do not require permitting.
- Discharges to ground on the Hanford Site are governed under State Waste Discharge Permit ST 4511. The reuse of aquaculture research effluent for irrigation would apply a small amount of residual fish food and fish feces to the ground. The Washington State Department of Ecology has indicated that the impact to groundwater from this application would be minimal. The effluent is currently being discharged to the river without permitting and would therefore not require coverage under ST 4511.

The proposed irrigation system upgrade activities would include reasonably foreseeable actions necessary to implement the proposed action, such as design, contracting, demolition and construction (including piping, electrical systems, vaults, concrete) and testing, acceptance, closeout, and maintenance.

Cultural and Biological Resources

Cultural and biological resource reviews were obtained for the proposed action (#2009-300-008, see attachments). The cultural resource review indicated that because the site has been previously disturbed, DOE determined that there was no potential to cause effects to historic properties, and no further action is required. The biological resource review indicated that there was no native vegetation in the project vicinity, and killdeer are the only native bird species that might nest in the area. The biological resource review would be updated next spring, before work is scheduled to commence. Workers would be directed to watch for cultural and biological materials (e.g., bones, artifacts, birds, or nests) during work activities. If any are encountered, work in the vicinity would stop until an archaeologist or biologist has assessed the significance of the find.

CX to Be Applied: The following Categorical Exclusion (CX) is listed in the DOE National Environmental Policy Act (NEPA) Implementing Procedures, 10 CFR 1021, Subpart D, published in the Tuesday, July 9, 1996, Federal Register (61 FR 36221):

> B2.5 Safety and environmental improvements of a facility, including replacement and upgrade of facility components, that do not result in a significant change in the expected useful life, design capacity, or function of the facility and during which operations may be suspended and then resumed. Improvements may include, but are not limited to: replacement/upgrade of control valves, in-core monitoring devices, facility air filtration systems, or substation transformers or capacitors; addition of structural bracing to meet earthquake standards and/or sustain high wind loading; and replacement of aboveground or belowground tanks and related piping if there is no evidence of leakage, based on testing that meets performance requirements in 40 CFR part 280, subpart D (40 CFR part 280.40). This includes activities taken under RCRA, subtitle I; 40 CFR part 265, subpart J; 40 CFR part 280, subparts B, C, and D; and other applicable state, Federal and local requirements for underground storage tanks. These actions do not include rebuilding or modifying substantial portions of a facility, such as replacing a reactor vessel.

Eligibility Criteria: The proposed activity meets the eligibility criteria of 10 CFR 1021.410(b) because there are no extraordinary circumstances that might affect the significance of the environmental effects of the proposal. The proposed activity is not connected to other actions with potentially significant impacts [40 CFR 1508.25(a)(1)] or with cumulatively significant impacts [40 CFR 1508.25(a)(2)] and is not precluded by 10 CFR 1021.211, Limitations on Interim Actions.

The "Integral Elements" of 10 CFR 1021 are satisfied as discussed in the following table:

INTEGRAL ELEMENTS, 10 CFR 1021, APPENDIX B, SUBPART D	
WOULD THE PROPOSED ACTION:	COMMENT OR EXPLANATION:
Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including requirements of DOE and/or Executive Orders?	The proposed action would not threaten a violation of regulations or DOE or Executive Orders.
Require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities?	Minor amounts of wastes generated by the proposed action would be treated, stored, or disposed of in existing onsite or offsite waste facilities.
Disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases?	Based on the Workplace Exposure Assessment, no preexisting hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products would be disturbed in a manner that would result in uncontrolled or unpermitted releases.
Adversely affect environmentally sensitive resources, including, but not limited, to: (a) property of historic, archeological, or architectural significance designated by federal, state, or local governments or property eligible for listing on the National Register of Historic Places (b) federally listed threatened or endangered species or their habitat, federally proposed or candidate species or their habitat, or state-listed endangered or threatened species or their habitat (c) wetlands regulated under the Clean Water Act and floodplains, federal- and state-designated wilderness areas, national parks, national natural landmarks, wild and scenic rivers, state and federal wildlife refuges, and marine sanctuaries (d) prime agricultural lands, special sources of water, tundra, coral reefs, or rainforests.	No environmentally sensitive resources would be adversely affected. Refer to the attached cultural and biological resource reviews. The proposed action would not adversely affect floodplains; wetlands regulated under the Clean Water Act; national monuments or other specially designated areas; prime agricultural lands; special sources of water; or tundra, coral reefs, or rainforests.

Checklist Summarizing Environmental Impacts: The following checklist summarizes environmental impacts that were considered when preparing this CX Determination. Answers to relevant questions are explained in detail in the text following the checklist.

IMPACT TO AIR

	Would the proposed action:	YES	NO
1	Result in more than minor and temporary gaseous discharges to the environment?		X
2	Release other than nominal and temporary particulates or drops to the atmosphere?		X
3	Result in more than minor thermal discharges?		X
4	Increase offsite radiation dose to >0.1 mrem (40 CFR 61 Subpart H)?		X

IMPACT TO WATER

	Would the proposed action:	YES	NO
5	Discharge any liquids to the environment?	X	
6	Discharge heat to surface or subsurface water?		X
7	Release soluble solids to natural waters?		X
8	Provide interconnection between aquifers?		X
9	Require installation of wells?		X
10	Require a Spill Prevention Control and Countermeasures Plan?		X
11	Violate water quality standards (WAC 173-200, Table 1)?		X

IMPACT TO LAND

	Would the proposed action:	YES	NO
12	Conflict with existing zoning or land use?		X
13	Involve hazardous, radioactive, polychlorinated biphenyl, or asbestos waste?	X	
14	Cause erosion?		X
15	Occur on the Hanford Reach National Monument?		X
16	Require an excavation permit?	X	
17	Disturb an undeveloped area?		X

GENERAL

	Would the proposed action:	YES	NO
18	Cause other than a minor or temporary increase in noise level?		X
19	Make a long-term commitment of large quantities of nonrenewable resources?		X
20	Require new utilities or modifications to utilities?	X	
21	Use pesticides, carcinogens, or toxic chemicals?	X	
22	Require a radiation work permit?		X

Explanations:

5. Alterations of irrigation and aquaculture effluent systems would result in minor and short-term effluent discharges to ground within the landscaped area of the 331 Building.

13. Proposed activities would be expected to result in small amounts of waste irrigation pipe, valves, pumps, etc. If items cannot be recycled or re-used, such wastes would characterized, handled, packaged, transported, treated, stored, and/or disposed of in existing Hanford Site or offsite treatment, storage, and disposal facilities in accordance with applicable local, state, and federal regulations, and DOE Orders and guidelines.

16. Irrigation system modifications would require an excavation permit to identify buried utilities, waste sites, and the presence of sensitive cultural or biological resources.

Stipulations in the excavation permit to minimize potential impacts to safety and the environment would be followed. A Workplace Exposure Assessment was also prepared for the field work, which addressed a variety of potential health and safety stressors. The protective stipulations in the assessment would be followed.

20. The irrigation system upgrade constitutes a modification to utilities. The upgrades are not expected to affect other utilities in the vicinity, such as electrical and communications systems.

21. Irrigation system upgrades are expected to use small amounts of potentially hazardous materials such as polyvinyl chloride (PVC) pipe, solvent cleaners, and adhesives. Product substitution (use of less toxic chemicals in place of more toxic chemicals) would be considered where reasonable and practicable.

Compliance Action:

I have determined that the proposed action satisfies the eligibility criteria, does not pose extraordinary circumstances, and meets the requirements for the CX referenced above. Therefore, using the authority delegated to me by DOE Order 451.1B, Change 1, I have determined that the proposed action may be categorically excluded from further NEPA review and documentation.

Concurrence: _____ **Date:** 9/22/09
Theresa L. Aldridge
PNSO NEPA Compliance Coordinator

Signature: _____ **Date:** 9/23/09
Woody Russell
Hanford NEPA Compliance Officer

Distribution:
R.S. Weeks, PNNL

Attachments

From: Till, Alisha
Sent: Tuesday, March 17, 2009 12:52 PM
To: Schielke, Dale R; Olson, Marvin E
Cc: Aldridge, Theresa L (PNSO); Prendergast-Kennedy, Ellen L; Rodriguez, Annabelle L; Till, Alisha
Subject: Irrigation modifications and Repaving of parking lot around building 331. NPCE# 2009-300-008.

Mr. Schielke,

Based on input provided on the Cultural and Ecological Resources Request form, the Irrigation Modifications and Parking Lot Repavement project description is described as follows:

This project is located in the 300 Area of the Hanford Site next to the 331 Building. The proposed project will replace the landscape irrigation system at the 331 Building to eliminate potable water use for irrigation purposes. The new irrigation system will rely on reused process water discharged from the Aquatics Laboratory at the 331 Building. In order to make these modifications, the project will need to install a diversion valve from the existing aquaculture outfall into a new holding tank with pumps that will supply water through new distribution main piping to the existing irrigation system control valves. Trenches for the piping and irrigation sleeves and pump station electrical will need to be excavated to a depth of 24 inches or less. An attached site photo/plan shows the preliminary routing of piping. The pipe corridor will be about 5 feet wide.

The excavation for the new holding tank will be more extensive and could be 10 feet or more in depth. The total excavated area may be 50 feet by 50 feet to allow for slope back. This has been intentionally located in a disturbed area along the edge of the 331 parking lot.

Additionally the 331 parking lot will need to be repaved. The area to be repaved is identified by the black cross-hatching in the attached map. The paving project will typically disturb only the top foot of soil just below the existing pavement. The deepest excavations needed for the paving project are specifically for the irrigation piping sleeves already discussed which would require excavation to a depth of 2 feet. Additionally a concrete water meter vault will be set in the sidewalk area NW of the main entrance to 331 building. That vault is 6 ft deep and will require an 8 ft excavation. The two landscape islands located in the south parking lot will also be replaced with two landscape swales, the swales will be surface depressions that may be as deep as two feet.

A records and literature search found:
The project area is heavily disturbed but cultural resources are located near the area so the project needs to stay in the existing project area as described.

Based on this information, a No Potential to Cause Effect Finding was recommended and sent to the DOE Hanford Cultural Resource Program Manager.

On March 16, 2009 the DOE Hanford Cultural Resource Manager responded and determined per 36 CFR Part 800, Subpart B, 800.3.a, that this project is not the type of undertaking with potential to cause effects to historic properties and no further actions are required.

Please note that all workers should be directed to watch for cultural materials (e.g. bones, artifacts) during all work activities. If any are encountered, work in the vicinity of the discovery must stop until an HCRP archaeologist has been notified, assessed the

significance of the find, and, if necessary arranged for mitigation of the impacts to the find. Please contact Doug McFarland or Ellen Prendergast-Kennedy, HCRP, if any changes to project location or scope are anticipated.

For tracking purposes, NPCE# 2009-300-008 has been assigned to your request.

Again, thank you for contacting us regarding your project.

Alisha Till
SRI Intern
EED/Cultural Resources Project
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February 13, 2009

Mr. Stuart Saslow
Pacific Northwest National Laboratory
P.O. Box 999, MSIN J2-09
Richland, WA 99352

Dear Mr. Saslow:

BIOLOGICAL REVIEW OF THE 331 BUILDING IRRIGATION MODIFICATIONS AND PAVEMENT REPLACMENT PROJECT, 300 AREA, ECR #2009-300-008.

Project Description:

• Install new irrigation lines in and around the parking lot at the 331 building, excavate for a new holding tank to allow for reuse of water from the existing fisheries / aquaculture tanks for irrigation. The holding tank will be located either in an area adjacent to the fish tanks that is currently lawn, or it will be adjacent to the 331 Building parking lot near the existing outfall.

Survey Objectives:

• Determine the occurrence in the project area of plant and animal species protected under the Endangered Species Act (ESA), candidates for such protection, and species listed as threatened, endangered, candidate, sensitive, or monitor by the state of Washington, and species protected under the Migratory Bird Treaty Act (MBTA).

• Evaluate and quantify the potential impacts of disturbance on priority habitats and protected plant and animal species identified in the survey.

Survey Methods:

• Pedestrian and visual reconnaissance of the proposed project site was performed by C. A. Duberstein on June 27, 2008 and by M. R. Sackschewsky on February 13, 2009. The percent cover of dominant vegetation was visually estimated.

• Priority habitats and species of concern are documented in: Washington Department of Fish and Wildlife (2008a, 2008b), and Washington State Department of Natural Resources (2008). Lists of animal and plant species considered Endangered, Threatened, Proposed, or Candidate by the U.S. Fish and Wildlife Service are maintained at 50 CFR 17.11 and 50 CFR 17.12; the list of birds protected under the MBTA is maintained at 50 CFR 10.13.

Survey Results:

• The proposed project areas, including the proposed tank location near the existing outfall, are all either maintained landscape, paved parking lot, or compacted gravel/sand. Essentially no native vegetation was observed.

• Killdeer (*Charadrius vociferous*) were observed in the project area; otherwise no migratory bird species were observed nesting in the vicinity of the proposed site.

Considerations and Recommendations:

• No plant or animal species protected under the ESA, candidates for such protection, or species listed by the Washington state government as threatened or endangered were observed in the vicinity of the proposed site.

• If any nesting birds (if not a nest, a pair of birds of the same species or a single bird that will not leave the area when disturbed) are encountered, or bird defensive behaviors (flying at workers, refusal to leave area, strident vocalizations) are observed during project activities, please contact M.R. Sackschewsky at 371-7187 for further consultation.

• Ground-disturbing activities, such as those associated with the use of heavy equipment to blade and spread gravel, present the potential for transport, spread and increase of noxious weedy species. When feasible, off-road travel should be minimized, and wheels and undercarriages of vehicles should be washed to minimize transport of weed seeds.

• Assuming compliance with the above recommendation, no adverse impacts to protected species, priority habitats, or other biological resources of concern are expected to result from the proposed action.

• This Ecological Compliance Review is valid until April 15, 2009, contact me at 371-7187 if an extension will be required.

Sincerely,

Michael R. Sackschewsky
Compliance Assessment Manager
Ecological Monitoring and Compliance Project

LB:mrs

REFERENCES

Washington Department of Fish and Wildlife. 2008a. Species of Concern in

Washington State. http://wdfw.wa.gov/wlm/diversty/soc/soc.htm

Washington Department of Fish and Wildlife. 2008b. Priority Habitats and Species. http://wdfw.wa.gov/hab/phshabs.htm

Washington State Department of Natural Resources. 2008. Washington Natural Heritage Program Plant Ranks. http://www1.dnr.wa.gov/nhp/refdesk/lists/plantrnk.html