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States Government — Department of Energy

Memorandum

Dec 10 11 35 AM '92 Rocky Flats Office

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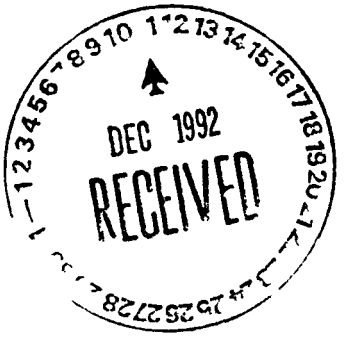

ERD PMP 13470

Section D Categorical Exclusion (RFO/CX06 93) Determination

C M Borgstrom Director Office of NEPA Oversight, EH 25 HQ

A copy of RFO/CX06 93 Radionuclide Removal from Surface Water Discharges is attached for your review

Robert M Nelson Jr
Manager

Attachment

cc w/Attachment
T D Pflaum DP 9
M G Seitz DP 6 1
S M Nesta EG&G
N Jannakos EG&G

ACTION DIST	
BENEDETTI R L	X
BENJAMIN, A	
BERMAN H S	
BARNIVAL, G	
CORDOVA R C	
ROUCHER D W	
DAVIS, J G	
ERRERA, D W	
HANNI, B J	
HEALY, T J	
HEDAHL, T G	X
HILBIG, J G	
DICKER E H	
KIRBY, W A	
KUESTER A W	
LEE, E M	
MANN H P	
MARX, G E	
MCKENNA F G	
MORGAN R V	
NIZZUTO, V M	
OTTER, G L	
RILEY J H	
SANDLIN N B	
SATTERWHITE, D G	
SCHUBERT, A L	
STETLOCK, G H	X
SHEPLER R L	
SULLIVAN M T	
WANSON E P	
[illegible]NSON, R B	
[illegible]N, J M	
AN J O	
Nesta S	X
Jannakos N	X
ORR, S CONTRO. TRAFFIC	X

Re w d f Addressee
C C to RFP
12-10-92

DATE BY

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ADMIN RECORD

1064

A-0005 000397

nF 46522 (Re 9 92)

SECTION D
CATEGORICAL EXCLUSION (CX) DETERMINATION REO/CX06 93

Proposed Action Radionuclide Removal from Surface Water Discharges

Location Ponds A 4 B 5 and C 2 Rocky Flats Plant Golden CO

Proposed by U S Department of Energy Rocky Flats Office

Description of the Proposed Action

Rocky Flats Plant (RFP) proposes to conduct bench and pilot scale testing and evaluation of processes and equipment for removal of radionuclide contaminants from the surface water discharges of terminal ponds The proposed action would take place inside an existing shelter located northwest of Pond A 4 (Figure 1) The proposed action is part of the RFP Workplan For The Control of Radionuclide Levels In Water Discharges From The Rocky Flats Plant §4 4 which is driven by an Interagency Agreement stipulation that requires DOE to identify potential treatment technologies that can be utilized in the event that water quality in the terminal ponds exceeds the State standards

The Colorado Water Quality Control Commission (CWQCC) has set standards for the radionuclide content of discharge waters from the plant. No information on characterization and removal of waterborne radionuclides at the extremely low levels required by the CWQCC is found in the existing literature and no database of appropriate water treatment processes and equipment exists The purpose of the proposed action is to identify evaluate and recommend types and sizes of water treatment processes and equipment for removal of particulate material including low levels of plutonium americium and uranium from discharge flows from RFP terminal ponds if they ever exceed State standards Treatment processes and equipment that may be considered include particulate adsorption precipitation sedimentation filtration (such as microstrainer algae removal multi media/sand filters and bag/cartridge filters and vessels) ion exchange and membrane separation (such as reverse osmosis)

RFP currently provides particulate filtration and granular activated carbon adsorption to remove waterborne contaminants from pond water prior to discharge This treatment is minimally effective in removing radionuclide contaminants which are thought to be associated with colloids/particulates in the micron to sub micron size range

The specific work of the proposed action would consist of the following

1 Bench scale testing

This testing work would involve obtaining pond water samples from existing pond water management pumping and piping systems in the Pond A 4 shelter Bench scale testing such as use of microstrainers for algae removal jar tests for sedimentation and coagulation processes using coagulants/flocculants and clays for suspended material removal and particulate adsorption precipitation and sedimentation would be conducted in on site or off site laboratories to determine the success of analyte removal The specific results of the bench scale tests would be information on the feasibility of using microstrainers for algae removal selection and dosage of coagulants/flocculants and the capacity of adsorption and precipitation techniques

For bench scale testing pond water sample size would range from 0 5 liters for analytical sampling to 10 liters for radionuclide sampling Total quantity of samples taken would be approximately 400 liters over the life of bench scale testing Wastes from bench scale tests would consist of spent coagulants/flocculants (standard drinking water treatment alum and iron salts) Total waste quantity generated would approximate 20 gallons These wastes and sample water would be discharged to Building 374 the liquid process waste treatment facility

2 Pilot scale testing

This testing would involve installation of a skid mounted treatment unit (such as multi media/sand filters etc) inside the Pond A 4 shelter and pumping water through the unit to acquire scaled down performance data The existing piping hose and pumped water delivery systems used in present pond management would be utilized by the proposed action The treatment units would be operated for a limited time and then removed from the shelter upon completion of the test Pilot scale processes being considered for testing are multi media/sand filters filter bags/cartridges ion exchange membrane separation technologies such as reverse osmosis and particulate adsorption precipitation and sedimentation Volumes of water circulated through equipment units would vary according to the nature of the treatment process tested Reverse osmosis would occur at about 2 to 5 gallons per minute (gpm) and filtration would occur at 25 to 50 gpm A total volume of about 200 000 gallons of water would be circulated through the units during pilot scale testing Water discharged from the units would be returned to the ponds No chemicals would be introduced into the water The anticipated results of pilot scale testing would be indications of the effectiveness of the treatment unit operations in the field not easily assessed by bench scale testing performance data for full scale evaluation and calculations, and comparison with existing state of the art treatment equipment.

Each individual pilot scale test (multi media/sand filter filter bag/cartridge ion exchange etc) would require a separate treatment unit Wastes generated by the proposed action would be expected to include water treatment filter bags and cartridges and multi media materials such as sand membranes and sludge material All wastes generated would be characterized and classified for proper handling packaging and disposal No hazardous wastes are expected to be generated by the proposed action Waste quantities generated would be approximately 20 cubic feet of plastic materials filter bags and cartridges and 60 cubic feet of granular (earthen/sand) water filtration materials

Bench and pilot scale testing would be followed by equipment evaluations which would consist primarily of calculations and reports for scaling up the bench and pilot scale test results assessment of other physical installations at RFP and in the area and review of standard water treatment equipment and practices in industry Evaluations of full scale vendor transportable process equipment may also be made These evaluations would produce recommendations on the types and sizes of treatment processes and equipment that should be used in the event that water quality of the terminal pond discharges do not comply with CWQCC standards or other regulatory requirements

The bench pilot scale testing program would begin in FY 93 Anticipated completion would be in approximately 18 months The total estimated cost of the proposed action is $250 000 None of the proposed activity would take place within the 100 year floodplain

Categorical Exclusion to be applied

B6 2 The siting construction and operation of temporary (generally less than 2 years) pilot scale waste collection and treatment facilities and pilot scale (generally less than one acre) waste stabilization and containment facilities (including siting construction and operation of a small scale laboratory building or renovation of a room in an existing building for sample analysis) if the action (1) Supports remedial investigations/feasibility studies under CERCLA or similar studies under RCRA such as RCRA facility investigations/corrective measure studies or other authorities and (2) would not unduly limit the choice of reasonable remedial alternatives (by permanently altering substantial site area or by committing large amounts of funds relative to the scope of the remedial alternatives)

DOE NEPA REGULATIONS SECTION D
CATEGORICAL EXCLUSION DETERMINATION RFO/CX06 93
Radionuclide Removal from Surface Water Discharges

I have determined that the proposed action meets the requirements for a categorical exclusion as defined in the Section D of 10 CFR 1021 Therefore I approve the categorical exclusion of the proposed action from further NEPA review and documentation

Date 12/2/92

Signature _____
Robert M Nelson Jr
Title for Manager Rocky Flats Office

Project Sponsor

Date 11-30-92

Signature _____
Thomas E Lukow
Title Director Waste Management & Environment Division

I have reviewed this determination and find that a categorical exclusion is the appropriate level of NEPA documentation

Date November 25, 1992

Signature _____
Patricia M Powell
Title NEPA Compliance Officer

ADS number WP#61211 (DP)
Authorization # 98643