



1 WASHINGTON DEPARTMENT OF ECOLOGY
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 8 IN THE MATTER OF:] NO. NOC-93-3
 9] APPROVAL OF NOC
 10 United States Department of Energy] APPLICATION FOR
 11 Process Effluent Treatment Facility] NONRADIOACTIVE AIR
 12 Richland, Washington] EMISSIONS
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15 On February 12, 1993 the United States Department of Energy (Energy) submitted a Notice of
 16 Construction (NOC) application to construct a new air emission unit - the 242-A Evaporator/Plutonium
 17 Uranium Extraction (PUREX) Plant Process Effluent Treatment Facility (ETF). The ETF will be
 18 located just outside of the Northeast corner of the 200 East Area at the Hanford Site.

19 Pursuant to the Washington State regulations for the Notice of Construction (NOC) set forth in Chapter
 20 173-400 WAC and Chapter 173-460 WAC, the new source review sections - WAC 173-400-110 and
 21 173-460-040, and based upon the complete NOC application submitted by Energy, the Department of
 22 Ecology (the department), dated August ____, 1993 now finds the following:

23 FINDINGS

- 24 1. The 200 Area ETF is a new industrial waste water treatment facility designed to treat a
 25 combination of dilute liquid waste streams generated on the Hanford Site. The initial feed
 26 stream will be comprised of effluent from the 242-A Evaporator and the Liquid Effluent
 27 Retention Facility.
- 28 2. A single treatment train is designed to handle a maximum flow rate of 150 gallons per minute.
 29 The treatment train will provide for feed storage, suspended solids removal (rough, to 2 um),
 30 ultraviolet/oxidation with hydrogen peroxide, pH adjustment, suspended solids removal (fine,
 31 to 0.5 um), degasification, reverse osmosis (RO), ion-exchange polishing, final pH adjustment,
 32 effluent storage, concentration of RO reject and resin regenerating solutions, filter backwash,
 33 and evaporation of product solids to dryness.

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34 3. The ETF may release air pollutants from the following 20 different points:

- 35 o Surge tank
- 36 o pH adjustment tank
- 37 o Degasing column
- 38 o First RO feed tank
- 39 o Second RO feed tank
- 40 o Effluent pH adjustment tank
- 41 o Verification Tanks (3)
- 42 o Secondary waste receiving tanks (2)
- 43 o Evaporator vent gas cooler
- 44 o Concentrate tanks (for dryer, 2)
- 45 o Sump tank (2)
- 46 o Powder hopper
- 47 o Drum cover operation
- 48 o Distillate condenser for dryer
- 49 o Resin dewatering system

50 All of these process components will contain vents which tie into the ventilation offgas (VOG).

51 A diagram describing the VOG system is attached.

52 4. Energy proposes high efficiency particulate air (HEPA) filters to control particulates for this
53 facility. The proposal does not include controls for organic and inorganic vapors, because the
54 emissions will be very small, and the cost of the potential controls would be too high. After
55 having reviewed the NOC application, the department has determined the proposal meets the
56 best available control technology for air toxics (T-BACT).

57 5. The total air pollutants emitted annually from the stack of the ETF are estimated: 2.41
58 pound of ammonia, 581 pounds of VOC, and 0.00052 pound of particulates. Except for
59 particulates, there are no other criteria pollutants to be emitted from this facility.

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60 APPROVAL CONDITIONS

- 61 1. VOC emissions from stream number G6 shall not exceed 0.50 gram per minute. VOC
62 emissions of the G6 stream shall also not exceed 0.55 gram per cubic meter at standard
63 conditions. Compliance shall be determined by computing the arithmetic mean of three one-
64 hour periods using EPA Reference Method 25A or Method 18 as described in 40 CFR Part
65 60 dated July 1, 1992.
- 66 2. Within 180 days of start-up of the facility, Energy shall conduct performance tests for VOC at
67 the location of G6. Based on the initial results of the performance tests, the department may
68 require Energy to conduct an annual performance test for these pollutants. Testing must be
69 performed by an independent testing firm, and results must be reported to the department
70 within 60 days after the test completion. Energy shall submit a test plan for the department's
71 approval at least 45 days before the testing. Testing shall occur only after the department
72 approves the plan. Energy shall notify the department at least 7 days before each test date.
- 73 3. Opacity from each stack shall not exceed 5 percent as measured by EPA Reference Method 9
74 as described in 40 CFR Part 60, Appendix A, dated July 1, 1992.
- 75 4. Energy shall develop and comply with an operation and maintenance manual for all equipment
76 that has the potential to affect emissions to the atmosphere. Copies of the manual shall be
77 available to the department. Energy shall also develop and follow an operation and
78 maintenance plan to implement procedures and control methods described in the NOC
79 application as T-BACT prior to start-up of any new or modified emission units or process
80 equipment, in accordance with WAC 173-460-040(8) dated June 18, 1991. Prior to
81 implementation, Energy shall submit the plan to the department for approval.
- 82 5. This final approval shall become void if construction of this unit is not commenced within
83 eighteen (18) months after issuance of this final approval, or if construction or operation of
84 these units is discontinued for eighteen (18) consecutive months.
- 85 6. Any activity undertaken by Energy, in a manner that is inconsistent with the application or this

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86 final approval, shall be subject to department enforcement under applicable statutes and
87 regulations. Nothing in this determination shall be construed to relieve Energy of its
88 obligations under any local, state, or federal laws or regulations.

89 7. Energy shall notify the department in writing at least 45 days before start-up of any emission
90 unit subject to this approval which could cause release of any air pollutants to the atmosphere.

91 8. Access to the source by the department shall be permitted upon request for the purpose of
92 carrying out its duties under applicable statutes and regulations. Failure to allow access is
93 grounds for enforcement action.

94 9. Energy shall not make any changes in the designs of the proposed air emission control system
95 without first notifying the department. Based on the notification, the department will make a
96 determination whether a new approval or a modification of this final approval is required.
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