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**NON-RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION APPROVAL ORDER  
CONDITIONS AND RESTRICTIONS  
DE16NWP-003 REVISION 1**

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**NON-RADIOACTIVE AIR EMISSIONS  
NOTICE OF CONSTRUCTION APPROVAL ORDER  
CONDITIONS AND RESTRICTIONS  
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7 **REGULATORY AUTHORITY**

8 Pursuant to the Washington State Department of Ecology (Ecology) General Regulations for Air Pollution  
9 Sources, Chapter 173-400 Washington Administrative Code (WAC), and Controls for new Sources of Toxic  
10 Air Pollutants, Chapter 173-460 WAC, Ecology finds the following:

11 **FINDINGS**

- 12 1. The United States Department of Energy (USDOE) proposes to modify their existing facility  
13 (Hanford) located in Richland, Washington.
- 14 2. The original proposed project consists of construction of the Effluent Management Facility (EMF) in  
15 support of the direct feed of low-activity waste configuration at the Waste Treatment and  
16 Immobilization Plant (WTP).
- 17 3. An original Notice of Construction (NOC) application for an Approval Order for non-radioactive air  
18 emissions for the EMF was completed on September 20, 2016. Approval Order DE16NWP-003 was  
19 issued with an effective date of February 17, 2017.
- 20 4. An NOC application to modify the emission monitoring and sampling conditions of Approval Order  
21 DE16NWP-003 was submitted on March 14, 2018. No changes to the proposed project were  
22 submitted as part of the NOC application to modify Approval Order DE16NWP-003.
- 23 5. Hanford is an existing major stationary source with a potential to emit more than 250 tons of  
24 regulated pollutant per year.
- 25 6. Hanford is located in a Class II Area designated as “attainment” for the purpose of NOC permitting  
26 for all pollutants.
- 27 7. The facility, if operated as herein required, will be in accordance with applicable rules and  
28 regulations, as set forth in Chapter 173-400 WAC and 173-460 WAC, and the operation thereof, at  
29 the location proposed, will not result in ambient air quality standards being exceeded.
- 30 8. The WTP is covered by PSD-02-01, but emissions covered by the proposed project do not require a  
31 modification of the Prevention of Significant Deterioration (PSD) permit.
- 32 9. Dimethyl mercury (DMM) modeled emissions exceeded the acceptable source impact level (ASIL)  
33 emission levels of WAC 173-460.
- 34 10. The permittee submitted RPP-ENV-59016, Rev 1 to Ecology for evaluation of DMM emissions  
35 using WAC 173-460-090, *Controls of New Sources of Toxic Air Pollutants: Second Tier Review*.
- 36 11. Ecology determined Toxic Air Pollutants from the operation defined in RPP-ENV-59016, Rev 1,  
37 will have no significant impact on air quality.
- 38 12. The proposed project conforms to the assumptions and analysis of  
39 RPP-ENV-59016, Rev 1, and bounds DMM emissions such that they have no significant impact on  
40 air quality.
- 41 13. Best Available Control Technology for Toxics (tBACT) for the control of particulates and aerosols  
42 is the use of High Efficiency Particulate Air (HEPA) filters.
- 43 14. The proposed project, if constructed and operated as herein required, will provide all known,  
44 available, and reasonable methods of emission control.

45 **THEREFORE, IT IS ORDERED** that the project as described in said Notice of Construction applications,  
46 as detailed in emission estimates, detailed in plans, specifications, and other information, submitted to the

- 1 Department of Ecology in reference thereto, is approved for construction, installation and operation, provided
- 2 compliance with the conditions and restrictions described below are met. This ORDER will be identified as
- 3 NOC APPROVAL ORDER **DE16NWP-003 Revision 1**.

1 **1.0 APPROVAL CONDITIONS**

2 **1.1 Emission Limits**

3 **1.1.1** Visible emissions from the Effluent Management Facility shall not exceed five (5)  
4 percent opacity.

5 **1.1.2** All TAPs, as submitted in the Permittee's original NOC Application as Table 1 and  
6 subsequent follow-on informational email, shall be below their respective ASIL or  
7 approved through a Second Tier review.

8 **1.1.3** Dimethyl mercury emissions shall not exceed 1.01E-04 pounds per 24-hr period.

9 **1.2 Operational Limits**

10 **1.2.1** The ventilation systems shall be operated in compliance with tBACT controls in  
11 Finding 13.

12 **1.3 Compliance Demonstration**

13 **1.3.1** Compliance with Approval Condition 1.1.1 shall be met by Tier 3 Visible Emissions  
14 Survey requirements of the Hanford Air Operating Permit.

15 **1.3.1.1** Should visible emissions be observed which are not solely attributable to water  
16 condensation, compliance with Approval Condition 1.1.1 shall be met by performing an  
17 opacity determination utilizing 40 Code of Federal Regulations (CFR) Part 60,  
18 Appendix A, Method 9, providing that such determination shall not place the visible  
19 emission observer in hazard greater than that identified for the general worker.

20 **1.3.2** Compliance with Approval Condition 1.1.2 shall be demonstrated by emission unit  
21 sampling as described in Section 3.0 for TAPs and applying these readings to determine  
22 the mass release rate of these TAPs in pounds and their respective release rate averaging  
23 times in WAC 173-460-150.

24 **1.3.3** Compliance with Approval Condition 1.1.3 shall be demonstrated as described in Section  
25 3.3.

26 **1.3.4** Compliance with Approval Condition 1.2.1 shall be met by operating the exhauster  
27 systems in accordance with tBACT emission controls found for this project.

28

29 **2.0 NOTIFICATION AND SUBMITTALS**

30 **2.1 Addressing**

31 Any required notifications and submittals required under these Approval Conditions shall be sent to the  
32 address below or to where Ecology directs them to be sent.

33 Washington State Department of Ecology  
34 Nuclear Waste Program  
35 3100 Port of Benton Boulevard  
36 Richland, Washington 99354  
37

38 **2.2 Operational Notice**

39 **2.2.1** Notification will be made to Ecology at least ten (10) days prior to initial testing.

40 **2.2.2** Notification will be made to Ecology at least ten (10) days prior to acceptance of  
41 radioactive Tank Waste. Ecology shall provide approval before radioactive Tank Waste  
42 is accepted for the first time.

## 1 **2.3 Recordkeeping**

2 Specific records shall be kept on the Hanford Site by the Permittee and made available for inspection by  
3 Ecology upon request. The records shall be organized in a readily accessible manner and cover a  
4 minimum of the most recent sixty (60) month period. The records to be kept shall include the following:

- 5 1. Records of calibration of stack gas flow rate and temperature measurement devices.
- 6 2. Stack flow rates and temperatures records.
- 7 3. Emission sampling results required in Section 3.0.
- 8 4. Facility operations and waste stream processing records supporting sample collection  
9 requirements in Section 3.0.
- 10 5. Supporting data and calculations to demonstrate compliance as detailed in Approval Conditions  
11 1.3.1, 1.3.2, 1.3.3, and 1.3.4.
- 12 6. All monitoring and operations records required to operate and maintain the emission control  
13 equipment which implements tBACT as described in Section 1.0.
- 14 7. Laboratory analysis result summaries taken in accordance with these approval conditions of any  
15 samples undertaken after the effective date of this ORDER which are examined for dimethyl  
16 mercury or other TAPS.

## 17 **2.4 Reporting**

18 Results of emission assessments conducted pursuant to Section 3.1 shall be submitted to Ecology within  
19 ninety (90) days of completion of such assessment.

20 Identification of any TAP not previously identified within the original NOC Application emissions  
21 estimate shall be submitted to Ecology within ninety (90) days of completion of laboratory analyses  
22 which verify emissions of that toxic air pollutant from the project.

23 Identification of any exceedance of Condition 1.1 Emission Limits shall be submitted to Ecology within  
24 ninety (90) days of identification.

25 Visible emission surveys, conducted pursuant to Compliance Demonstration requirement 1.3.2, shall be  
26 submitted to Ecology within thirty (30) days of completion of the survey with an assessment of the cause  
27 of visible emissions and a report of the maintenance conducted to maintain the subject exhaust system's  
28 tBACT operations.

29

## 30 **3.0 EMISSION SAMPLING**

### 31 **3.1 Baseline Assessment**

32 All baseline assessments shall be conducted within ninety (90) days after commencement of operations  
33 with actual tank waste.

#### 34 **3.1.1 Dimethyl Mercury Baseline**

35 Dimethyl mercury sampling and analysis will be in accordance with the United States Environmental  
36 Protection Agency (EPA) procedures or Ecology approved alternative procedure including the use of  
37 sorbent tube or approved instrument provided such devices are spanned to collect representative samples  
38 of the stack dimethyl mercury concentration. Contemporaneous stack flow rate and temperature will be  
39 applied with the stack gas concentration to report dimethyl mercury in terms of pounds per 24-hour  
40 period.

### 1 3.2 TAPs Emission Assessment

2 Permittee will develop and implement an annual sampling and analysis plan (SAP). The SAP shall  
3 address a minimum of the three analytes with the highest potential ambient concentration relative to their  
4 ASILs of WAC 173-460-150 in addition to dimethyl mercury. The SAP will need to be submitted and  
5 approved by Ecology before sampling occurs. Analytical methods for the analyses shall be the EPA,  
6 Occupational Safety and Health Administration (OSHA), or National Institute for Occupational Safety  
7 and Health (NIOSH) approved, or by an Ecology approved equivalent method.

### 8 3.3 Dimethyl Mercury Emission Assessment

9 Permittee will develop and implement a monthly specific SAP that shall address the emission of dimethyl  
10 mercury. This SAP is in addition to the annual SAP in Section 3.2. The SAP will need to be submitted  
11 and approved by Ecology before sampling occurs. Dimethyl mercury sampling and analysis will be in  
12 accordance with the EPA procedures or Ecology approved alternative procedure including the use of  
13 sorbent tube or approved instrument provided such devices are spanned to collect representative samples  
14 of the stack dimethyl mercury concentration. Contemporaneous stack flow rate and temperature will be  
15 applied with the stack gas concentration to report dimethyl mercury in terms of pounds per 24-hour  
16 period.

17 Monthly sampling for dimethyl mercury must be collected in accordance with the facility operational  
18 status precedential ranking below.

- 19 1. The sample will be collected while actively processing secondary liquid waste streams generated  
20 during low-activity waste melter offgas control system operation from the Low- Activity Waste  
21 Facility.
- 22 2. If the EMF is not processing the above waste stream within the calendar month, the sample will  
23 be collected while actively processing other liquid waste streams.
- 24 3. If no liquid waste streams are processed within the calendar month, the sample will be collected  
25 while the EMF is operating.
- 26 4. If the EMF is not operating within the calendar month, the sample will be collected upon  
27 restarting operations.

28 If the EMF operated at a higher ranking during the calendar month but samples were collected during a  
29 lower ranked operational status, Ecology must be notified within thirty (30) days of sample collection.  
30 The notification must include an explanation and justification for why the sample was not collected at the  
31 highest ranked operational status which occurred during the calendar month.

32 Dimethyl mercury sample results will be compared to the limit in condition 1.1.3. The monthly analytical  
33 results need to be tracked on a month by month basis for an entire year (rolling monthly period). This  
34 record will need to be retained in accordance with Section 2.3.

35 Ecology shall be notified within 24 hours of receiving the analytical results of any exceedance of the  
36 dimethyl mercury emission limit in condition 1.1.3. An assessment of the cause of the dimethyl mercury  
37 exceedance shall be submitted to Ecology within thirty (30) days of receiving the analytical results.

38 If the measured dimethyl mercury values exceed the limit in two calendar monthly samples in a 12-month  
39 rolling period, the facility will need to cease waste processing operation in a safe and controlled manner.  
40 The facility can continue to run to support non waste operations (e.g. simulant runs to maintain the rest of  
41 the Waste Treatment Plant in an operational manner).The EMF can restart waste operations once an  
42 assessment of the cause behind the exceedances occurred and corrective actions to take preventing future  
43 exceedances is submitted and approved by Ecology. If the actions required result in a permit  
44 modification, the Permittee will need to follow the standard NOC modification process as an additional  
45 action.

1    **4.0    GENERAL CONDITIONS**

2    All plans, specifications, and other information submitted to the Department of Ecology relative to this  
3    project and any authorizations or approvals or denials in relation thereto shall be incorporated herein and  
4    made a part thereof.

5    **4.1    AVAILABILITY OF ORDER AND O&M MANUAL**

6    Legible copies of this Order and the O&M manual shall be available to employees in direct operation of  
7    the exhaust systems, and be available for review upon request by Ecology.

8    **4.2    REGISTRATION FEES**

9    The applicant will pay the required registration fees within the deadline date specified on the invoice from  
10   Ecology.

11

12   **4.3    DISCONTINUING CONSTRUCTION AND/OR OPERATIONS**

13   It shall be grounds for rescission of this approval if physical construction and/or operation is discontinued  
14   for a period of eighteen (18) months or more. Ecology may extend the 18-month period upon a  
15   satisfactory showing that an extension is justified.

16   **4.4    COMPLIANCE ASSURANCE ACCESS**

17   Access to the source by representatives of Ecology or the EPA shall be permitted upon request. Failure to  
18   allow such access is grounds for enforcement action under the federal Clean Air Act or the Washington  
19   State Clean Air Act, and may result in revocation of this Approval Order.

20   **4.5    EQUIPMENT OPERATION**

21   Operation of the ventilation system and related equipment shall be conducted in compliance with all data  
22   and specifications submitted as part of the NOC applications and in accordance with the O&M manual,  
23   unless otherwise approved in writing by Ecology.

24   **4.6            ACTIVITIES INCONSISTENT WITH THE NOC APPLICATION AND THIS**  
25   **APPROVAL ORDER**

26   Any activity undertaken by the permittee or others, in a manner that is inconsistent with the original NOC  
27   application and this determination, shall be subject to Ecology enforcement under applicable regulations.

28   **4.7    OBLIGATIONS UNDER OTHER LAWS OR REGULATIONS**

29   Nothing in this Approval Order shall be construed to relieve the permittee of its obligations under any  
30   local, state, or federal laws or regulations.

31   **4.8    MODIFICATIONS**

32   Any modifications to the ventilation system's operating and maintenance procedures, contrary to  
33   information in the NOC applications, shall be reported to Ecology at least sixty (60) days before such  
34   modification. Such modification may require a new or amended NOC Approval Order.

35

1 **YOUR RIGHT TO APPEAL**

2 You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within  
3 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and  
4 Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

5 To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- 6 • File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means  
7 actual receipt by the PCHB during regular business hours.
- 8 • Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See  
9 addresses below.) E-mail is not accepted.

10 You must also comply with other applicable requirements in Chapter 43.21B RCW and WAC 371-08.

11 **ADDRESS AND LOCATION INFORMATION**

Street Addresses	Mailing Addresses
<p><b>Department of Ecology</b> Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503</p> <p><b>Pollution Control Hearings Board</b> 1111 Israel RD SW STE 301 Tumwater, WA 98501</p>	<p><b>Department of Ecology</b> Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608</p> <p><b>Pollution Control Hearings Board</b> PO Box 40903 Olympia, WA 98504-0903</p>

12 This Authorization may be modified, suspended, or revoked in whole, or in part, for cause including, but  
13 not limited to, the following:

- 14 1. Violation of any terms or conditions of this authorization.
- 15 2. Obtaining this authorization by misrepresentation, or failure to fully disclose all relevant facts.

16 The provisions of this authorization are severable and, if any provision of this authorization, or  
17 application of any provisions of this authorization to any circumstance, is held invalid, the application of  
18 such provision to their circumstances, and the remainder of this authorization, shall not be affected  
19 thereby.

20 The New Source Review Fee has been assessed according to WAC 173-455. No approval of a permit or  
21 service for any activity covered in this Order will be valid until the required fee is paid in full.  
22

23 The effective date of this authorization shall be given in the transmittal letter for this ORDER. All  
24 references to procedures or test methods shall be to those in effect as of the effective date of this ORDER.  
25

26 **DATED** at Richland, Washington, this XX day of MONTH, 2018.

**REVIEWED AND PREPARED BY:**

\_\_\_\_\_  
Lilyann M. Murphy, P.E.

**APPROVED BY:**

\_\_\_\_\_  
Alexandra K. Smith, Program Manager

XXXXXX XX, 201X

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