DOE/EIS-0089

-206

ADDENDUM TO ENVIRONMENTAL IMPACT STATEMENT

Operation of PUREX and Uranium Oxide Plant Facilities

Hanford Site

Richland, Washington

FEBRUARY 1983

U.S. DEPARTMENT OF ENERGY

WASHINGTON, D.C. 20545

DOE-Richland, WA

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WASHINGTON, D.C. 20545

DOE-Richland, WA

COVER SHEET
ADDENDUM/FINAL ENVIRONMENTAL IMPACT STATEMENT
DOE/EIS-0089

a) Lead Agency: The Department of Energy

b) Proposed Action: Operation of PUREX and Uranium Oxide Plant Facilities, Hanford Site, Washington.

c) For further information contact:

- Mr. Roger K. Heusser, Director, Division of Materials Processing, Office of Nuclear Materials Production, Mail Stop DP-132, Washington, DC 20545, (301)353-5496

- Dr. Robert J. Stern, Director, Environmental Compliance Division, EP-36 Office of the Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness, 1000 Independence Avenue, S.W., Room 4G-064, Washington, DC 20585, (202)252-4600

To request copies of the Addendum/Final EIS contact: Mr. Roger K. Heusser at the address noted above.

d) Designation: Addendum/Final EIS

e) Abstract: A draft EIS for operation of PUREX and Uranium Oxide Plant Facilities at the Hanford Site, (Richland) Washington was prepared and made available for public review and comment in May, 1982. Twelve comment letters were received. Consideration of these comment letter in preparing the final EIS required only minor changes to the draft EIS. The changes to the draft EIS, the comment letters, and responses to the letters are contained in this addendum. This addendum and the draft EIS constitute the final EIS.

The proposed action is the resumption of operations of the PUREX/UO_3 facilities to produce plutonium (and other special nuclear materials) for national defense needs. The facilities will include modifications to mitigate environmental impacts, reduce occupational hazards, and improve safety and security measures around the facilities. The scope of the EIS includes discussion of environmental impacts associated with the resumption of operation of the PUREX/UO_3 facilities. Three alternatives and their environmental impacts are evaluated and compared with the proposed action.

FOREWORD

In accordance with the Department of Energy's responsibilities under the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) NEPA regulations, 40 CFR Parts 1500-1508, a draft environmental impact statement (EIS) on the "Operation of PUREX and Uranium Oxide Plant Facilities - Hanford Site, Richland, Washington," (DOE/EIS-0089D) was prepared and made available for public review and comment in May 1982.

As a result of the circulation of the draft EIS, 12 letters were received from recipients of the document. After careful review of comments provided in the letters, it was determined that changes required to the draft EIS would be minor, and would not involve the development or modification of new alternatives or analyses. Therefore, in accordance with the procedures outlined in the CEQ regulations (40 CFR 1503.4(c)), only the comments, the responses, and the changes, and not a final environmental statement, need be circulated.

This addendum has been prepared to meet the requirements noted above. It includes copies of all letters received, responses to the comments and issues raised, and errata sheets to the draft EIS.

The addendum should be used in concert with the draft EIS (DOE/EIS-0089D).

CONTENTS

CONTENTS

1.0 INTRODUCTION

This addendum to the draft environmental impact statement (DEIS) for the PUREX/Uranium Oxide (UO_3) Plants contains the public comments received on the draft statement, responses to the issues raised and changes or corrections to the draft statement. Since textual changes to the DEIS are minor, changes have been noted on errata sheets contained in this document. This is consistent with part 1503.4 (c) of the Council on Environmental Quality Regulations for Implementation of the Procedural Provisions of the National Environmental Policy Act. This document combined with the DEIS represents the Final EIS which has been filed with the Environmental Protection Agency.

1.1 PURPOSE

This document responds to public comments received on the DEIS and provides required changes to that statement. Comments on the DEIS required minor textual changes. No comments raised issues which warranted the modification of alternatives evaluated, the addition of new alternatives, or additional environmental analyses.

1.2 TREATMENT OF COMMENT LETTERS

Comment letters were assigned letter numbers as they were received. The letters were reviewed and comments were identified for response. In several of the letters received, the reviewer had no comments. These letters are noted in this document as "requiring no response." Other comments raised issues which were beyond the scope of the DEIS or requested information already addressed in the draft statement. In these cases the commentor was referred to the appropriate section(s) of the DEIS for this information. Brief statements were also made which specifically responded to the comment. In a few cases comments were raised which required changes to be noted to correct textual errors, add new information or to clarify text. In these cases the response notes that changes are reflected in the errata sheets. The preparers of the statement also noted some minor textual errors which are also reflected by changes on the errata sheets.

2.0 COMMENT LETTERS AND RESPONSES

This section contains reproductions of the comment letters received and provides responses to the issues raised. For the ease of the reader, an index is provided which lists the comment letters received, identifies the letter number assigned and notes where each letter and response can be found in this section.[a]

(a) Letter number assignments were based solely on the order that the letters were received.

2.1 INDEX OF COMMENT LETTERS AND RESPONSES

Comment Letter Number	Page Number	Commentor
11	2.39	Nora J. Hallett, Director Oregon Fellowship of Reconciliation 1838 S.W. Jefferson Portland, Oregon 97201
12	2.43	U.S. Department of the Interior Bruce Blanchard, Director Environmental Project Review Office of the Secretary Washington, D.C. 20240

2.2 PRESENTATION OF COMMENT LETTERS AND RESPONSES

In the following pages, the twelve comment letters are presented in the form received by the Department of Energy. Following each letter, the responses to comments are provided.

5/26/82

Office of Nuclear Materials Production
Mail Stop A-319
Washington, DC.

Dear people:

I am writting to express my opposition to the reopening of the PUREX plant in Hanford. My reasons are basically two: (1) There are no assurance that the area will not be contaminated by the activities at the plant. The DOE report contents that the pollution controls instituted since 72 will result in less environmental damage than before. That means nothing to me and my family. Unfortunately too many episodes throughout the country reveal, after the fact, that we do not have safeguards to prevent contamination. I do not want another danger created were I live. Nothing is more important than life. Mine and the life of others. Plutonium will not contribute to that (health, life), just the opposite. The announcement that 600 jobs will be create means nothing to us. Other jobs should be created, those which foster preservation of health (and development of it). Much is to be done in this area. Jobs could

be created to educate people about their own resources, nutrition, healing themselves, caring for children, etc, etc. Those are very constructive jobs. Also how to do agricultural work to produce food for ourselves and others in an organic way (no destructive of the environment, which translate into "no destructive of ourselves").

② I and my family strongly oppose nuclear and biological armaments. The plutonium will be used for warheads. We support a nuclear freeze. We are not the only ones in the Tri-Cities. More will be heard from many of us who are no "pro-nuclear", as it is said... We want jobs in our communities but no necessarily in nuclear energy. Life is too precious; in fact NOTHING is more precious than life. I believe that more energy and resources must be used to promot understanding among human beings of all countries than in instilling suspicion, fear and hate.

Peace to all of us

Berta Stella Cantón

BERTA STELLA CANTÓN
2007 W 35th AVE
KENNEWICK, WA 99336

RESPONSE TO COMMENT LETTER NO. 1 (B. S. CANTÓN)

Comment: Environmental damage will occur from plant operations. The facilities do not have adequate safeguards to prevent contamination.

Response: The PUREX/UO_3 facilities were operated for 17 years, from 1956 to 1972 with no observable or measured environmental effects on the public health and safety. Since 1975, the PUREX/UO_3 facilities have been substantially modified to improve efficiency and productivity and mitigate potential environmental consequences primarily by reducing the emissions to the environment and improving the safety and security of operations. These modifications are described briefly in Sections 3.1.5 and 3.1.6 and more fully in Sections A.2.4 and A.2.5 of the DEIS.

The findings of this EIS indicate that for all alternatives considered: 1) for normal operations the radiation dose consequences to workers and the public would be within applicable guidelines; 2) the abnormal events (credible potential accidents) postulated during operation of the PUREX/UO_3 process and during any necessary transportation, would result in negligible health effects to the public; 3) nonradiological and radiological emissions to air and water would be such that their onsite and offsite consequences would be within applicable guidelines and standards; and 4) the socioeconomic impacts of all of the alternatives would be minor.

The calculations and data gathered to form these conclusions were based on conservative assumptions and all results indicate that there would be only minor environmental effects.

Comment: The positive socioeconomic gains from the jobs created by the operation of the facility do not counter or balance out the negative environmental effects of plant operation.

Response: As described in Sections 1.2.5 and 1.4, projected plant operation is shown to cause no significant environmental impacts. A more complete discussion of environmental effects can be found in Chapter 5 of the DEIS.

Comment: Strongly oppose nuclear and biological armaments.

Response: As noted in the Purpose and Need Section 2.0 of the DEIS, (page 2.1), the purpose of this statement was to evaluate the environmental impacts of reactivating the PUREX/UO_3 facilities and the alternatives to that action. Discussion of the need for armaments of any type is outside the scope of the EIS.

United States Department of the Interior
BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
FEDERAL BUILDING & U.S. COURTHOUSE
BOX 043-550 WEST FORT STREET
BOISE, IDAHO 83724

IN REPLY REFER TO PN 150
120.1

MAY 28 1982

Mr. Roger K. Heusser, Director
Department of Energy
Division of Materials Processing, DP-132
Office of Nuclear Materials Production (GTN)
Washington, D.C. 20545

Dear Mr. Heusser:

Subject: Review of Draft Environmental Impact Statement for Operation of PUREX and Uranium Oxide Plant Facilities, Benton County, WA (ER 82/897)

The subject statement has been reviewed by appropriate members of our staff, and we have no objections to the content of the document. Please let us know if we can be of further assistance in the review process.

Sincerely yours,

Douglas J. James

Acting Regional Environmental Officer

cc: Commissioner
Attn: Code 150
Office of Environmental Review

RESPONSE TO COMMENT LETTER NO. 2 (DEPARTMENT OF INTERIOR, BUREAU OF RECLAMATION NORTHWEST REGION)

No response required.

CITY OF KENNEWICK WASHINGTON
CIVIC CENTER
210 W. 6TH / P.O. BOX 6108 / KENNEWICK, WASHINGTON 99336

May 25, 1982

Roger K. Heusser, Director
Division of Materials Processing
DP-132
Office of Nuclear Materials Production
Washington, D. C. 20545

Dear Mr. Heusser:

The following comments are submitted relative to the Draft Environmental Impact Statement for the Purex Plant, Hanford Site, Richland, Washington (DOE/EIS-0089D):

> Page 4.12, Section 4-4-5--Kennewick General Hospital has announced plans to construct a new 80-bed hospital within the City of Kennewick, on Vista Field. Construction is to begin within two to five years.
>
> Page 5.28--The report indicates that Uranium Oxide powder will be transported, by rail, to National Lead, Fernald, Ohio. Will the railcars go through the City of Kennewick?

Thank you for the opportunity to review this document.

Very truly yours,

William C. Kennedy

William C. Kennedy, Director
Planning and Community Development

WCK:ns

RESPONSE TO COMMENT LETTER NO. 3 (CITY OF KENNEWICK)

Comment: Kennewick General Hospital has announced plans to construct a new 80-bed hospital within the City of Kennewick on Vista Field. Construction is to begin within two to five years.

Response: This information is reflected in the errata sheets.

Comment: Will railcars transporting uranium oxide powder to National Lead, Fernald, Ohio go through the City of Kennewick?

Response: Railcars transporting the uranium oxide powder would go through the City of Kennewick. Such shipments would comply with applicable U.S. Department of Transportation regulations which are designed for safe transport of such materials.

As stated in Section 5.1.4.5, the probability of a rail accident is approximately 3.0×10^{-3} per shipment. Also, a recent study (referenced in the DEIS) of the risks of transporting uranium ore (which is primarily UO_3) indicates that no significant consequences to public health and safety would result from even a severe accident that released several thousand pounds of UO_3 (page 5.28 of the DEIS).

1201 Jadwin Avenue, Suite 101
Richland, Washington 99352

AREA CODE 509
946-5133

TRI-CITY NUCLEAR INDUSTRIAL COUNCIL, INC.

SERVING PASCO · RICHLAND · KENNEWICK WASHINGTON

June 15, 1982

Mr. Roger K. Heusser
Director, Division of
Materials Processing
Office of Nuclear Materials
Production
Mail Stop DP-73
Washington, D.C. 20545

Dear Mr. Heusser:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (EIS) for Operation of PUREX and Uranium Oxide Plant facilities. I am writing to emphasize my support for the Department of Energy's proposal to resume operation of these facilities. This proposed action is environmentally sound and the most cost effective alternative for meeting national defense and research and development needs.

There are several points supporting the proposed action that deserve special emphasis in the EIS summary, namely:

- It is my understanding that very conservative assumptions are used in many of the calculations. Yet, even with these assumptions, the analyses indicate no perceptible adverse environmental effects.

- The proposed action occurs in an area well isolated from population centers, thus limiting the consequences of any accident.

- The proposed action eliminates the risks and costs associated with long-distance shipment of nuclear material.

As publisher of the Tri-City Herald for thirty-five years, I have been able to observe the development and operation of the PUREX Plant and other Hanford site facilities. I do not

feel that the EIS sufficiently credits the historical flexibility, reliability, and safety of the PUREX and Uranium Oxide facilities that was demonstrated during their long previous operating history. Specific points which should be particularly emphasized are:

- The outstanding safety record during past operations. Accident rates have always been far below industrial norms.

- The fact that environmental impacts of previous operations were thoroughly studied and found to be minor or undetectable. Many systems have now been specifically added to further reduce impacts.

- Much of the expertise developed during previous operations remains in place. A highly trained staff, with many years of operating experience, is available.

Finally, I believe it is essential that the positive socioeconomic aspects of the proposed actions with respect to the other alternatives be recognized. In my continued association with the local communities, it is clear that much of the population of Southeastern Washington already understands the issues and the technology associated with the resumption of PUREX operations. Support of national defense needs has traditionally been strong. Workers and attendant services are already in place. The EIS should emphasize that the proposed action of resuming PUREX operations minimizes socioeconomic dislocations.

I hope these comments are useful in completing the document. I would like to receive a copy of the final EIS when available.

Sincerely,

TRI-CITY NUCLEAR INDUSTRIAL COUNCIL, INC.

Glenn C. Lee
Acting President

GCL/bwh

RESPONSE TO COMMENT LETTER NO. 4 (TRI CITY NUCLEAR INDUSTRIAL COUNCIL)

Comment: It should be emphasized in the Summary that even with the very conservative assumptions used in many of the calculations, the analyses indicate no perceptible adverse environmental effects.

Response: The EIS indicates (Section 1.2.1) that conservative assumptions were used to provide an upper bound or "worst case" presentation of impacts. Actual emissions will likely be lower than those described.

Comment: It should be emphasized in the Summary that the consequences of any accident are limited because the proposed action occurs in an area well isolated from population centers.

Response: The isolation of the facilities from population centers is a factor which limits the impact of an accident from the proposed action on the surrounding population. As noted on page 1.7 of the Summary, "the nearest population center from the facilities' location is 35 km (22 miles)." Also on page 1.11 of the Summary it is stated that no adverse health effects to the public would occur from potential accidents.

Comment: It should be emphasized in the Summary that the proposed action eliminates the risk and costs associated with long distance shipment of nuclear material.

Response: If irradiated fuel is implied by the term "nuclear material," then to the extent that the N-Reactor provides irradiated fuel for the Hanford PUREX operation, the risks and costs of long distance transport of large amounts of fuel to an offsite processing facility will be eliminated.

Comment: PUREX has had an outstanding safety record during past operations. Accident rates have always been far below industrial norms.

Response: No response required.

Comment: Systems have been added to further reduce environmental impacts.

Response: As noted in Sections 3.1.5 and 3.1.6, many modifications have been made to the PUREX facilities to make them safer and to reduce environmental impacts.

Comment: Emphasis should be placed on the fact that a highly trained staff with many years of operating experience is available.

Response: Comment noted.

VICTOR ATIYEH
GOVERNOR

Executive Department

155 COTTAGE STREET N.E., SALEM, OREGON 97310

June 29, 1982

Mr. Roger K. Heusser, Director
Division of Materials Processing
Office of Nuclear Material's Production
Mail Stop DP-73
Washington, D.C. 20545

Subject: Draft Environmental Impact Statement on Operation of PUREX and Uranium Oxide Plant Facilities; PNRS # OR820524-064-4

Thank you for submitting your draft Environmental Impact Statement for State of Oregon review and comment.

The draft was referred to the appropriate state agencies for review. The consensus among reviewing agencies was that the draft adequately described the environmental impact of your proposal.

We will expect to receive copies of the final statement as required by Council of Environmental Quality Guidelines.

Sincerely,

INTERGOVERNMENTAL RELATIONS DIVISION

Kay F. Wilcox
A-95 Coordinator

KW:mh

OREGON PROJECT NOTICE ACKNOWLEDGEMENT

State Clearinghouse
Intergovernmental Relations Division
155 Cottage Street N.E.
Salem, Oregon 97310

Phone (503) 378-3732 or Toll Free in Oregon 1-800-452-7813

Applicant: U. S. Dept. of Energy
Operation of PUREX &
Project Title: Uranium Oxide Plant Fac.

Date Rcd. 5/21/82

PNRS # OR 820524-064-4

Your project notice has been assigned the file title and number that appear above. Please use it in correspondence and if applicable enter it in Block 3A on the 424 form for the project. Your project notice must also be submitted for review to any affected areawide clearinghouse.

a. FEDERAL GRANTS

/ Initial 30 day review of your notice of intent to apply for grant funds began on above date

/ 30 day review of your final grant application began on the above date.

b. HUD HOUSING

/ Initial 30 day review began on the above date

c. DIRECT FEDERAL DEVELOPMENT

/ Initial 30 day review

d. ENVIRONMENTAL IMPACT STATEMENT

/X/ Initial 45 day review of draft EIS began on above date.

/ / 30 day review of final EIS began on the above date

e. STATE PLAN/AMENDMENT

/ / 45 day review began on above date.

State Clearinghouse use only:
St. Agcy. Due Date _____
Fed Agency _____
County _____

Your project notice was circulated to state agencies checked below

ECONOMIC DEVELOPMENT & CONSUMER SVCS.
Agriculture
_X_ Soil & Water Division
_X_ Economic Development
_ Fire Marshal
_ Housing
_ Labor
_ Real Estate
EDUCATION
_ Education
_ Higher Education
_ Educ Coordinating
EXECUTIVE
_ Budget
HUMAN RESOURCES
_ Senior Services
_ Children's Services
_ Community Services
_ Corrections
_ Employment
_ Health
_ Mental Health
_ Vocational Rehabilitation
_ Adult & Family Services
NATURAL RESOURCES
_ Governor's Office
_X_ DEQ
_X_ Fish and Wildlife
_X_ Forestry
_X_ Geology
_X_ Lands
_X_ Water Resources

TRANSPORTATION
_ Director
_ Highway Division
_X_ Parks Division
_ Public Transit
_ Aeronautics
MISCELLANEOUS
_ Extension Service
_ Health Plng & Dev. Agcy.
_X_ LCDC
_ Law Enforcement
_X_ Energy
_X_ Historic Preservation
_ Other

RESPONSE TO COMMENT LETTER NO. 5 (OREGON INTERGOVERNMENTAL RELATIONS)

No response required.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUL 0 1 1982

Mr. Robert K. Heusser, Director
Division of Materials Processing, DP-132
Office of Nuclear Materials Production (GTN)
U.S. Department of Energy
Washington, DC 20545

Dear Mr. Heusser:

We have reviewed the Draft Environmental Impact Statement, "Operation of PUREX and Uranium Oxide Plant Facilities, Hanford Site, Richland, Washington," (DOE/EIS-0089D). We have no comments to make.

Sincerely,

Richard E. Cunningham, Director
Division of Fuel Cycle and
Material Safety
Office of Nuclear Material Safety
and Safeguards

RESPONSE TO COMMENT LETTER NO. 6 (NUCLEAR REGULATORY COMMISSION)

No response required.

Albert C Snow
308 N. 6th. Street
Yakima, WA. 98901

Mr. Roger K. Heusser, Director
Division of Materials Processing
DP-132
Office of Nuclear Materials
Production (GTN)
Washington, D.C.
20545

COMMENTS ON PUREX/UO2 PLANT - HANFORD (DOE/EIS-0089D)

1. NO ADDRESS IS MADE TO ACCIDENT AFTERMATH PLANNING.
2. STATISTICAL MODELING OF RADIATION EFFECTS SHOULD BE MUCH SIMPLER IN WORDING FOR LAY READERS.
3. NO STUDY IS DONE ON THE EFFECTS THE PRODUCTS WOULD HAVE ON THE ENVIRONMENT AFTER PRODUCTION.
4. NO MENTION IS MADE OF A METHOD TO MONITOR LONG (20-30 YEAR) TERM HEALTH EFFECTS ON WORKERS OR ENVIRONMENT.

FOR THESE REASONS I FIND THIS EIS
0089D INADEQUATE AS WRITTEN.

SINCERELY, Albert C Snow

RESPONSE TO COMMENT LETTER NO. 7 (A. C. SNOW)

Comment: Post-accident emergency planning is not addressed.

Response: The five major processing accidents that are considered to be credible are discussed in Section 5.1.4 and also in Appendix B. Of these accidents, the dissolving of short-cooled fuel is the only accident for which any offsite controls would be necessary. These controls are in the form of restricted consumption of locally grown foodstuffs as described in Section 5.1.4.3. All other credible accidents require onsite response only and are covered by a facility emergency plan.

Comment: The explanation of the statistical modeling of radiation effects should be made simpler for lay readers.

Response: The subject of statistical variability of radiation-induced health effects is inherently complex. Attempts were made in the text and in the additional discussion in Appendix C to write in a manner understandable to the lay reader. The discussion of health effects in Appendix C emphasizes that possible health effects may range from zero to a small number at the radiation dose/levels of concern in the PUREX/UO_3 EIS. To make the text of Appendix C easier to understand, definitions of the terms "somatic effects" and "generic effects" have been included in the errata sheets with other changes to the Glossary (Section 8).

Comment: A study should be made on the environmental effects of the special nuclear material products after they have been produced.

Response: Further processing or use of special nuclear materials produced in the PUREX/UO_3 process are beyond the scope of this EIS. As noted in the Purpose and Need Section of the DEIS page 2.1), the purpose of this statement was to evaluate the environmental impacts of reactivating the PUREX/UO_3 facilities and the alternatives to that action.

Comment: No mention is made of a method to monitor long-term health effects on workers or the environment.

Response: Health data for Hanford employees are collected through routine physical examinations performed by physicians at the Hanford Environmental Health Foundation. This information, together with worker radiation exposure data (also taken routinely) are analyzed as part of a continuing effort to assess the effects of radiation exposure on the health of Hanford workers.

The environmental measurement and surveillance programs that have been in place since 1944 and those identified as part of the PUREX pre-operational program are identified on page 5.1. It is noted that these measurement and surveillance programs will be continued after resumption of PUREX/UO_3 operations. The primary task of these programs is the computation of dose to local population groups from all exposure pathways that may show the presence of radioactivity from Hanford operations, in order to determine compliance with DOE Order 5480.1A (USERDA 1975). The data from Hanford Environmental Surveillance Programs are published annually (Sula 1981). As described in Section 6.1, Chapter XI of DOE Order 5480.1A establishes radiation protection standards for occupationally-related external and internal exposure and standards for exposure to members of the public.

The surveillance programs are expected to continue as appropriate for as long as Hanford remains a dedicated site. Additional information regarding the environmental measurement and surveillance programs can be found in ERDA-1538, Section II.1.2, beginning on page II.1-85 (USERDA 1975).

July 1, 1982

Mr. Roger K. Heusser, Director
Division of Materials Processing DP-132
Office of Nuclear Materials Production (GTN)
Washington, DC 20545

Dear Sir:

I will raise some philosophical, occupational safety and technical questions in reference to EIS Draft of OPERATION OF PUREX AND URANIUM OXIDE PLANT FACILITIES, Hanford Site, Richland, Washington. Basing my remarks on the assumed resumption of production of nuclear weapon compoents at this site, I refer to page 1.1 footnote d. Given the guidelines of DOE responsibility, one cannot argue a clear case that lines should be drawn between the scope of DOE activities compared to the scope of DOD responsibility. However, it seems that DOD should appropriately become visable to my community in a real way and that could be accomplished by refering to military activities for what they are and not leaving the impression that a benign DOE is the final voice of authority.

With the stated goal of the present administration to produce another 17,000 nuclear weapons and given the upsurge of grassroot support for a nuclear weapons freeze, this EIS broadens in its scope. I would hope that the preparers of this EIS have had the time, on the job, to consider the implications of their careful writing. Too often, the assignments given to workers are simply carried out and conscience is not applied nor allowed.

The following questions are sincerely asked:

1. Were the preparers of this EIS given briefings in the ethical questions raised by their participation in this action?
2. Has occupational stress been addressed for the preparers of the EIS?
3. Has an EIS been prepared to determine the real and potential environmental effects of producing nuclear weapons and if not, why not, because it is a major federal expenditure of dollars and resouces?
4. Why was a public hearing never held during the scoping process of this PUREX EIS?
5. How did you get public input into the scoping?
6. Refer to table 5.6: What are the occupational effects of nitrogen oxide release? What does nitrogen oxide do to the human body? What are the threshold limits for occupational exposure? What kinds of health conditions could this create among workers? Are there any studies completed concerning worker exposure to this compound at the Hanford site? What is the tolerance of these workers to nitrogen oxide levels?
7. What was the basis for choosing the different process rates as shown in Appendix D? The rates include an upper limit of 3000 mt. Are there considerations that the 3000 mt rate will be utilized at any point in the operation of PUREX?
8. Refer to table 5.7: The distances listed infer that shipments are coming from well outside the Hanford site. If the N-Reactor produces 700 mt per year and we add already stored mt, then the 3000 mt upper limit could not be reached given the full term operation of PUREX.

8. con't: Where is the extra mt coming from and by what means? What kinds of transportation will this involve and what routes? Which EIS or document numbers are involved? What kinds of safeguards are in place for such distances? If the mt is not coming from the Hanford resercation only, please give the names of U.S. commercial reactors or foreign government owned reactors providing the additional mt. If from foreign countries, are we abiding by present non-proliferation treaties?
9. Has it been decided to proceed with direct neutralization of waste or will waste continue to be processed through B plant? If directly neutralized, how many tanks, or what design and are they covered in the double-shelled tank description at the Hanford site? Are the tanks of the same design as the present double-shelled tanks? Are they covered under the present Tank EIS?
10. Refer to page 1.3 paragraph beginning, "The analysis is based on processing 12 percent..." What does the word COMPATIBLE mean in this context? Is this the same burn-up characteristics or the same heat values or is it aluminum cladding fuel? If not aluminum cladding, how are you going to declad and process the fuel?
11. The EIS does not address any on site facility for use in the case of a worse case nuclear accident. Where are the workers to be taken for decontaminatinn and is that facility within the boundaries of the site so that the time elemant can be minimized?
12. What happens to the PUREX process if it is interrupted by a "worse case" electrical power failure? What safeguards are in place to cover this eventuality?

Thank you for addressing my questions in this matter.

Yours truly,

R. Eileen Buller
1703 W. 15th St.
Kennewick, WA 99336

RESPONSE TO COMMENT LETTER NO. 8 (R. E. BULLER)

Comment: Were the preparers of this EIS given briefings in the ethical questions raised by their participation in this action? Has occupational stress been addressed for the preparers of the EIS?

Response: Preparers of the EIS have made every attempt to be thorough and unbiased in addressing the environmental issues associated with PUREX/UO_3 operations. The issue of occupational stress for the preparers of the DEIS is outside the scope of the statement and was therefore not addressed.

Comment: Has an EIS been prepared to determine the real and potential environmental effects of producing nuclear weapons and if not, why not, because it is a major federal expenditure of dollars and resources?

Response: As noted in the Purpose and Need Section of the DEIS the issue raised in this comment is outside the scope of this document.

Comment: Why was a public hearing never held during the scoping process of the PUREX EIS? How did you get public input into the scoping?

Response: This EIS was prepared in conformance with CEQ regulations. Response to the Notice of Intent (published in 46 FR 7049-50, January 22, 1981) indicated that a public hearing was not necessary. Twenty-one letters were received, of which only four raised issues related to the EIS. The comments in the four letters were considered during preparation of the EIS. The method of receiving public input on the scoping of the EIS is described in the Foreword to the EIS and conforms to CEQ regulations.

Comment: What was the basis for choosing the different process rates as shown in Appendix D? The rates include an upper limit of 3000 MT. Are there considerations that the 3000 MT rate will be utilized at any point in the operation of PUREX?

Response: The basis for choosing the different processing rates is indicated in Chapters 2, 3 and Appendix D. The 3000 MT/yr rate is the maximum rate at which the PUREX facility could operate. Current plans call for operation, at least in initial years, at lower rates. Actual future levels of operation will depend on future needs for plutonium and other special nuclear materials.

Comment: Refer to Table 5.6: What are the occupational effects of nitrogen oxide release? What does nitrogen oxide do to the human body? What are the threshold limits for occupational exposure? What kinds of health conditions could this create among workers? Are there any studies completed concerning worker exposure to this compound at the Hanford Site? What is the tolerance of these workers to nitrogen oxide levels?

Response: NO_x levels from PUREX/UO_3 facility operations will be maintained below those established by the USEPA to protect the health and safety of workers and the public (see Section 5.1.2.1.). Therefore, NO_x emissions from the PUREX/UO_3 facilities are not expected to result in occupational health effects. The commentor is referred to Sax 1979 (Irving Sax 1979, Dangerous Properties of Industrial Materials, Fifth Edition, published by Van Nostrand Reinhold Company) for a discussion of the effects of NO_x exposures at levels above the threshold limit value.

Comment: Refer to Table 5.7: The distances listed infer that shipments are coming from well outside the Hanford Site. If the N-Reactor produces 700 MT per year and we add already stored MT, then the 3000 MT upper limit could not be reached given the full term operation of PUREX. Where is the extra MT coming from and by what means? What kinds of transportation will this involve and what routes? Which EIS or document numbers are involved? What kinds of safeguards are in place for such distances? If the MT is not coming from the Hanford Reservation only,

please give the names of U.S. commercial reactors or foreign government-owned reactors providing the additional MT. If from foreign countries, are we abiding by present non-Proliferation treaties?

Response: Table 5.7 is based on onsite shipment distances (N-reactor to PUREX) and there is no inference that there is any offsite fuel being shipped into the Hanford Site. The large total distance per year is the cumulative distance for the total number of shipments. The footnote to the table will be changed as follows for clarification: (a) "These distances are the summation of all individual shipments during the year and include one way distances only. The distance of the return trip, during which no nuclear materials are transported, is not included."

There are presently no plans for shipment of fuel from offsite. If PUREX were to operate at the maximum rate, available fuel would be processed in a shorter interval, and the possibility exists that other fuel could be processed during the operating period projected for PUREX. If this were to be proposed, studies would be made to insure compatibility of the fuel with the current PUREX process, and appropriate environmental review would be undertaken at that time.

Specified changes were included in the errata sheets.

Comment: Has it been decided to proceed with direct neutralization of waste or will waste continue to be processed through B Plant? If directly neutralized, how many tanks, of what design and are they covered in the double-shelled tank description of the Hanford Site. Are the tanks of the same design as the present double-shelled tanks? Are they covered under the present tank EIS?

Response: Section 3.1.1.3 (page 3.7 to 3.10) of the text discusses high-level liquid waste management. As stated, current plans call for direct neutralization of the current acid waste, however, processing the waste through B-Plant is an option. The number of additional tanks needed would vary with the total tonnage of fuel processed. As indicated in the text and footnote (c) on page 3.9, the direct neutralization option would require 25, 17 and 6 additional tanks if 48,000, 30,000 and 10,000 MT, respectively, of fuel were processed. These tanks would be constructed in accordance with or better than the tank design and construction specifications described in DOE/EIS-0063, and appropriate environmental review would be performed before construction. A description of double-shell tanks with heat removal equipment (for storage of boiling wastes) can be found in ERDA-1538 (USERDA 1975).

Comment: Refer to page 1.3, paragraph beginning, "The analysis is based on processing 12 percent..." What does the word COMPATIBLE mean in this context? Is this the same burn-up characteristics or the same heat values or is it aluminum cladding fuel? If not aluminum cladding, how are you going to declad and process the fuel?

Response: In the sentence quoted, the word "compatible" refers to the process equipment presently available in the PUREX/UO_3 facilities without the need for significant modifications. As some specific examples; a compatible fuel would have cladding that could be removed by the dissolution process (i.e., zirconium or aluminum), and the fission product and transuranic content of the fuel would be within the shielding capacity of the cells and gloveboxes in the facilities.

Comment: The EIS does not address any onsite facility for use in the case of a worse case nuclear accident. Where are the workers to be taken for decontamination and is that facility within the boundaries of the site so that the time element can be minimized?

Response: The UO_3 Plant has a small decontamination facility designed to handle minor contamination cases. This facility is backed up by a large decontamination station which is adjacent to the UO_3 Plant. The PUREX building has three such areas strategically located to minimize the distance between the decontamination area and the operating area. The decontamination areas are kept stocked with decontamination soaps, reagents, applicators and first aid supplies. Trained personnel are readily available at all times to staff the decontamination units.

In addition, there is an Emergency Decontamination Facility adjacent to Kadlec Hospital in Richland for treatment of emergency cases.

Comment: What happens to the PUREX process if it is interrupted by a "worse case" electrical power failure? What safeguards are in place to cover this eventuality?

Response: The power supply to the PUREX facility is fully supported by an alternate power system available from diesel generators. Two generators would supply the necessary power to maintain the plant in a safe status, and a third generator would be in standby. In addition, a steam-driven exhaust fan would supply ventilation to System No. 1, which operates in the areas of greatest radioactivity in the facility. Batteries supply power for transferring the switchgear from the regular power system to the alternate service. These batteries would also provide emergency lighting and maintain the fire detection system if the alternate power supply failed. This information is reflected in the errata sheets.

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION X

1200 SIXTH AVENUE

SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF: M/S 443

JUL 1982

Dr. Robert J. Stern
Director, Environmental Compliance Division
U.S. Department of Energy
1000 Independence Avenue, S.W., Room 4G-064
Washington, D. C. 20585

RE: DOE/EIS-0089D: Operation of Purex and Uranium Oxide Plant Facilities Hanford Site; Richland, Washington

Dear Dr. Stern:

The Environmental Protection Agency (EPA) has completed reviewing the Draft Environmental Impact Statement (Draft EIS) on the proposed operation of the Purex and Uranium Oxide Plant Facilities on the Department of Energy's Hanford Reservation within Washington State. The Draft EIS provides a thorough and useful description of the proposed operation of these spent nuclear fuel reprocessing facilities and of the potential environmental consequences of resuming their operation after a 12 year hiatus. The Draft EIS indicates that planned releases of radionuclides to the site environment and the general environment will be substantially reduced below the levels which were characteristic of the facilities' previous operations between 1955 and 1972. It thus appears that the facility improvements made over the last decade have resulted in significant progress toward reducing the discharge of radionuclides with long half-lives and toward attaining release levels which are as low as reasonably achievable (ALARA).

EPA promulgated the Environmental Radiation Protection Standards for Nuclear Power Operations [40 CFR Part 190; Uranium Fuel Cycle Standards or UFCS] in January 1977 to apply to the nuclear fuel cycle. EPA has compared the radiological releases presented in the DEIS to the UFCS in order to judge their significance. The standards do provide, in our opinion, the best available mechanism for assessing the magnitude of the radiological doses anticipated and the quantities of radioactive effluents released from facilities such as those being evaluated in this NEPA environmental review. The release and dose levels specified in the UFCS represent, in our view, the levels which constitute ALARA.

The radiological dose and release limits in the UFCS are expressed in terms of an individual maximum dose and a radiological release quantity per gigawatt year of electrical energy produced by the fuel cycle. As approximately 35 metric tons of fuel are required to produce one gigawatt of electricity, these limits can be expressed as maximum quantities for each 35 metric tons of fuel reprocessed. The Purex plant is expected to reprocess fuel at rates of 1050, 2100 and 3000 metric tons (MT) annually. EPA recognizes that N-Reactor fuel differs from the commercial power plant fuel upon which the 35 MT figure is based, however, we did not have the detailed information necessary to make a useable quantitative distinction.

Under these conditions it appears that the individual doses resulting from the operation of the Purex and Uranium Oxide Plant facilities and the radiological discharges from the facilities to the general environment will be below the levels specified in the relevant portions of the UFCS.

EPA, however, is concerned with the long-term potential environmental hazards presented by the estimated discharges of Plutonium-239 (^{239}Pu) to disposal ponds and cribs, because it has a half-life of 24,000 years. (The estimated discharge is 280 millicuries per 1050 MT of fuel processed, evenly divided between ponds and cribs.) Based on the comparison to the 40 C.F.R. Part 190 standards, the ^{239}Pu discharges, while meeting the standard, may still be higher than necessary. As we noted in our comments on the DOE/ERDA EIS on Waste Management Operations at the Hanford Reservation (ERDA-1538), the long-term hazards are complicated by the "fact that physical and administrative controls for this waste will have to be exercised over time periods which are extremely long in comparison to the relatively brief history of human social institutions." This situation leads EPA to be concerned about the practice of relying upon the soil to remove the ^{239}Pu and other long-lived radionuclides.

EPA addressed this disposal practice in our comments on ERDA-1538. The specific comment concerning the use of soil columns was as follows:

> "The practice of using the favorable ion exchange properties of soils to remove radioactivity from liquid wastes, and thus to confine the radioactivity in soil columns, is a long established procedure. However, in using such a technique, the assumption is made that favorable environmental conditions will continue in the soil allowing activity trapped therein to decay to innocuous levels. Because of the long time periods over which these wastes will remain hazardous, there will be continuing requirements for control and surveillance. The AEC should consider eliminating these practices by requiring that all liquid radioactive wastes be treated to reduce the concentration levels to the lowest levels practicable before being discharged to the ground, if such ground discharge cannot be totally eliminated."

These concerns are still valid today. For this reason EPA urges DOE to evaluate practical actions (using the ALARA principle) that might reduce the discharges of ^{239}Pu to ponds and cribs. EPA suggests that the Final EIS discuss the technical and economic bases for not totally eliminating the discharge of ^{239}Pu to cribs and ponds. If elimination is not possible, the Final EIS should evaluate additional waste management methods and Purex Plant process changes that could result in further reducing the total quantity of ^{239}Pu released to cribs, ponds, and the environment. It would also be appropriate for the Final EIS to discuss the ultimate fate of the plutonium, providing reasonable assurances that there will be no unacceptable risk to the public or environment in the distant future.

Based upon these concerns we have rated this proposed action and EIS "LO-2" [LO: Lack of Objections; 2: insufficient information]. Should you or your staff wish to discuss our comments and suggestions, please contact Mr. Dick Thiel, our Environmental Evaluation Branch Chief, at (FTS) 399-1728 or (206) 442-1728.

Sincerely,

John R. Spencer
Regional Administrator

cc: ORP, EPA
OFA, EPA

RESPONSE TO COMMENT LETTER NO. 9 (U.S. ENVIRONMENTAL PROTECTION AGENCY)

Comment: EPA urges DOE to evaluate practical action (using the ALARA principle) that might reduce the discharges of ^{239}Pu to ponds and cribs. EPA suggests that the Final EIS discuss the technical and economic bases for not totally eliminating the discharge of ^{239}Pu to cribs and ponds. If elimination is not possible, the Final EIS should evaluate additional waste management methods and PUREX Plant process changes that could result in further reducing the total quantity of ^{239}Pu released to cribs, ponds, and the environment.

Response: Of the total plutonium contained in the liquid effluents, material balance calculations indicate that 99.997 percent will be recovered, thus only 0.003 percent will be discharged to cribs and ponds. This is equivalent to 0.80 Ci of ^{239}Pu (about 14 grams) per 3000 MT of irradiated fuel processed. The plutonium concentration in the discharge is less than 0.7 percent of the appropriate onsite concentration guide (Table D.8 and D.9).

The following three alternatives for reducing the plutonium content of liquid effluents discharged to cribs and ponds were evaluated using the ALARA principle.(a) However, none of these alternatives were judged to warrant implementation under ALARA considerations. Without adopting any of the alternatives, effluents released to cribs and ponds from PUREX operation are all projected to have Pu concentrations below the guidelines of DOE Order 5480.1A for release to uncontrolled areas (Table D.8 of the DEIS).

1. Route all discharge streams to a central evaporator.

2. Evaporate cooling water from PUREX operations.

3. Evaporate low-risk liquid effluents through a cooling loop and through cooling towers.

The first of these, routing all discharge streams to a central evaporator, would completely eliminate the discharge of plutonium to cribs and ponds. However, although this alternative is technically feasible, it is not economically justifiable using ALARA principles since the contribution to offsite radiation exposures from the current practice is essentially zero. The other two alternatives would reduce but not eliminate plutonium discharge. The alternatives are further described below.

The first alternative, to route all discharge streams to a new central evaporator, is described in ERDA-1538. This alternative would require additional equipment, facilities, and modifications to reduce the radioactive releases to cribs and ponds by providing the capability to monitor, control, or treat all process waste streams and by providing additional contamination confinement barriers. The proposed facilities, integrated with improvements funded in prior years, would provide capability to process, monitor, control, and dispose of process liquid streams which are presently routed to cribs and ponds. Adoption of this alternative would (1) limit yearly releases to soil columns to essentially zero for both plutonium and fission products, (2) reduce all effluent stream concentrations to levels acceptable for release to uncontrolled areas, and (3) reduce the population dose below the present level of about 1×10^{-6} man-rem/yr (USERDA, 1975, p. V-31). At least 12 ha (30 acres) of land would be required for the facilities. The estimated capital cost for this alternative is between $32 million and $35 million and the annual operating costs would be about $3 million (1977 costs).

The second alternative would collect the PUREX Plant cooling water, route it to diversion basins, analyze the effluents and use an evaporator to concentrate the

(a) In establishing design objectives for equipment to control radioactive emissions the term "as low as is reasonably achievable" taking into account the state of technology, and the economics of improvements in relation to benefits to the public health and safety and other societal and socioeconomic considerations.

plutonium in a slurry (Weigman, 1982).[b] The fraction of plutonium discharged would be reduced by an order of magnitude from (0.003 percent to 0.00003 percent). This alternative would require additional land for diversion basins and would have a negligible effect on offsite radiation exposures. The capital costs (1982 dollars) for this alternative would be about $30 million with operating costs projected at $3 million per year.

The third alternative would involve closed loop cooling using cooling towers. This alternative would route low-risk cooling water through a cooling loop and through cooling towers for evaporation. In addition to the cooling towers, a bypass system would be required to divert raw water to the cooling towers to keep the evaporation efficiencies stable. However, this alternative would not eliminate plutonium discharges since only low-risk cooling water would be treated. Project costs for this alternative were estimated to be about $4 million with cooling tower costs ranging from $1.2 to $3.1 million (1977 costs).

None of the alternatives evaluated were found to be economically justifiable using ALARA principles since the contributions from the existing disposal practices to public dose were estimated to be nearly zero (USERDA 1975, pp. V-28 to V-35).

Improved liquid effluent controls (Sections 3.1.5.1, 3.1.6.1 Appendix A.2.4.1 and A.2.5.1 of the DEIS) that have been incorporated in the PUREX facility during the past few years will result in significant reductions in quantities of radioactivity discharged to cribs and ponds when compared to the quantities discharged when PUREX was operated from 1956 to 1972. Some of the improvements made were addressed by ERDA-1538 as a specific detail of one of the alternatives described here. Monitoring capabilities and process control systems were improved in conjunction with other modifications at PUREX. These improvements to the process are in accordance with the ALARA principle and are based on the current technology for the reduction of ^{239}Pu in liquid emissions and overall cost considerations.

Comment: It would be appropriate for the final EIS to discuss the ultimate fate of the plutonium providing reasonable assurances that there will be no unacceptable risk to the public or environment in the distant future.

Response: At present, the very low concentrations of plutonium discharged to the ground via cribs and ponds are immobilized in the soil. The soil columns in the 200 Areas exhibit good ion exchange properties and make good filter beds. Plutonium is held very tightly by the soils, with essentially all of it held within a few tens of feet of the point of release and is isolated from the accessible environment. The water table is at least 200 feet below the point of discharge.

Wherever such crib or pond discharge practices are followed, a continuing program exists for extensive monitoring of the movement of these materials. The practice of using the favorable ion exchange properties of the Hanford soils to remove radioactivity from liquid waste and confine it in soil columns is a well-established procedure. However, because of the long-term burden of control and surveillance inherent in the use of a technique that results in local accumulations of radioactivity in soil, the DOE program at Hanford for the PUREX/UO_3 process has been based on a goal of major reductions in the radionuclides in the effluent streams. This has been accomplished by process modifications in accordance with the ALARA principles and represents application of current technology levels.

The retention of the plutonium in the soil column presently poses no unacceptable risk to the public or environment. The present practices provide the basis for continued monitoring and control of plutonium that is discharged to cribs and ponds.

(b) Wiegman, S. A. to K. S. Murthy. 1982. Letter of transmittal, No. 282-2531, Rockwell Hanford Operations, Richland, Washington.

JOHN SPELLMAN
Governor

DONALD W. MOOS
Director

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Mail Stop PV-11 • Olympia, Washington 98504 • (206) 459-6000

July 8, 1982

Mr. Roger Heusser, Director
Division of Materials Processing, DP-132
Office of Nuclear Materials Production (GTN)
U.S. Department of Energy
Washington, D. C. 20545

Dear Mr. Heusser:

Thank you for the opportunity to review the draft EIS for the operation of PUREX and Uranium Oxide Plant Facilities at the Hanford site in this state. We have coordinated the review of this document with other state agencies. The only agency with comments to offer is the Department of Ecology; our comments follow:

1. From the information supplied in the EIS, it appears that impacts to the environment will be at a minimum as a result of using state-of-the-art treatment methods and compliance with state and federal effluent/emission requirements.

2. It is proposed that the facility will require up to 240 million gallons of water per month to be withdrawn from the Columbia River. Our preliminary review indicates that a water right permit will be required from this department. A contrary conclusion may result if it can be shown that water rights were established under Federal law to carry out the primary purpose for which the Hanford Reservation was established. See United State v. Mexico, 438 US. 696 (1978).

3. Based upon Section 313 of the Federal Water Pollution Control Act, as amended, it is clear that federal agencies are required by state law to obtain a State of Washington Waste Disharge Permit for projects discharging waste to groundwaters unless otherwise exempted therefrom pursuant to the provisions of that Section.

In relation to the above, I have also enclosed a Water Right application and Waste Discharge Permit application. If you have any questions, please contact Mr. Greg Sorlie, Environmental Review Section.

Sincerely,

Dennis Lundblad, Supervisor
Field Operations Division

DL:lc

cc: Greg Sorlie
Charles B. Roe, Jr., Senior Assistant Attorney General

RESPONSE TO COMMENT LETTER NO. 10 (STATE DEPARTMENT OF ECOLOGY)

Comment: A water right permit from the State of Washington Department of Ecology may be required for operation of the PUREX/UO_3 facilities unless it can be shown that the water rights were established under Federal law to carry out the primary purpose for which the Hanford Reservation was established.

Response: A clarification is hereby provided that no new water withdrawal capacity is required for PUREX/UO_3 facility operations. These operations will be supplied with water from the existing 200 Area Export Water System. The United States has a reserved water right at Hanford for such uses, based on the establishment of the Hanford Nuclear Reservation by the Federal Government for nuclear materials production and research and development activities.

Comment: Based on Section 313 of the Federal Water Pollution Control Act, as amended, Federal agencies are required by state law to obtain a State of Washington Waste Discharge Permit for projects discharging wastes to groundwaters unless otherwise exempted therefrom pursuant to the provisions of that Section.

Response: DOE has an NPDES permit for discharges to navigable waters from Hanford Site activities. No effluents from the operation of the PUREX/UO_3 facilities will be discharged to navigable waters or wells; no additional permits under the Federal Water Pollution Control Act or applicable state laws or regulations are required. The use of cribs and ponds in the 200 Areas for discharges of effluents from the facilities are examined and described in detail in ERDA-1538 (USERDA 1975) and were summarized in Chapter 5 of the DEIS.

FELLOWSHIP OF RECONCILIATION
1838 SW JEFFERSON • PORTLAND, OREGON 97201
503/222-7293

June 21, 1982

Roger K. Heusser
Division of Meterials Processing
Office of Nuclear Materials Production
Department of Energy
Washington, D.C. 20545

Dear Mr. Heusser:

I am greatly distressed to learn that the draft Environmental Impact Statement for the PUREX/UO is already available and comment period ends July 5.

Enclosed is a copy of the letter you sent me on December 29, 1981 in which you stated that you would send me a copy when they were available.

The PUREX operation has potential hazards for the Columbia River valley and surrounding area. By not sending me a copy of the EIS as promised, you have severely diminished the fairness of the democratic process in any government decision related to environmental quality of the PUREX operation. Many people in communities near Hanford have been waiting for me to inform them about the possible effects of PUREX operation on their environment.

I hope you will send me a final environmental impact statement on the PUREX/UO3 plant when it is completed.

Sincerely,

Nora J. Hallett
Director, Oregon F.O.R.

RESPONSE TO COMMENT LETTER NO. 11 (N. J. HALLETT)

A draft EIS was sent to the commentor in reply to the letter.

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

ER 82/897

JUL 13 1982

Roger K. Heusser, Director
Division of Materials Processing, DP-132
Office of Nuclear Materials Production (GTN)
U.S. Department of Energy
Washington, D.C. 20545

Dear Mr. Heusser:

Thank you for your letter forwarding copies of the draft environmental impact statement for Operation of PUREX and Uranium Oxide Plant Facilities, Benton County, Washington. Our comments are presented according to the format of the statement or by subject.

General

Since this project involves reactivation of an existing facility, and no major construction activities are planned, we do not expect any major impacts to migratory birds or anadromous fish. However, the impact statement does not adequately document the presence of important anadromous fish species or threatened or endangered species which occur in the project area. The final statement should present this information.

Aquatic Ecology

The draft statement refers to another document, ERDA-1583, for a discussion of the aquatic resources of the Columbia River in the Hanford Reach. Due to the national significance of the anadromous salmon and steelhead trout of the Columbia River and the fact that the free flowing Hanford Reach is the last remaining mainstem spawning habitat for chinook salmon, we feel that a limited discussion of these resources should be presented in the final statement.

Threatened or Endangered Species

In accordance with Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531, et seq.), NRC is required to assure that their actions have taken into consideration impacts to federally listed or proposed threatened or endangered species for all federally funded, constructed, permitted, or licensed projects.

The draft statement claims that no threatened, rare, or endangered species exist in the project area. However, through coordination with our Endangered Species staff, we have determined that a listed specie, the Bald Eagle, may be present within the area of project influence (see Attachment A). NRC may consider the attached list as a resource pursuant to Section 7(c) and may begin a biological assessment if it is determined that this action is a "construction project" (Attachment B). Agency responsibilities pursuant

to Section 7(a) and (c) of the Act are described in Attachment B. If there are any questions regarding endangered species or NRC's responsibilities under the Act, please contact Mr. Jim Bottorff, Endangered Species Team Leader, U.S. Fish and Wildlife Service, 2625 Parkmont Lane, S.W., Olympia, Washington 98502 (Phone: 206-753-9444, FTS 434-9444).

We hope these comments will be helpful to you.

Sincerely,

Bruce Blanchard, Director
Environmental Project Review

Enclosures 2

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CANDIDATE SPECIES THAT MAY OCCUR WITHIN THE AREA OF THE PROPOSED REINITIATION OF OPERATION OF PUREX AND URANIUM OXIDE PLANT FACILITIES ON THE HANFORD SIDE, BENTON COUNTY, WASHINGTON

SE #1-3-81-SP-512

LISTED: Bald Eagle (Haliaeetus leucocephalus) - winter resident along the Hanford Reach of the Columbia River, an area that is sited as being within the area of project influence.

PROPOSED: None.

CANDIDATE: None.

ATTACHMENT A

FEDERAL AGENCIES RESPONSIBILITIES UNDER SECTIONS 7(a) and (c)
OF THE ENDANGERED SPECIES ACT

SECTION 7(a) - Consultation/Conference

Requires: 1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;

2) Consultation with FWS when a Federal action may affect a listed endangered or threatened species to insure that any action authorized, funded or carried out by a Federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of Critical Habitat. The process is initiated by the Federal agency after they have determined if their action may affect (adversely or beneficially) a listed species; and

3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed Critical Habitat.

SECTION 7(c) - Biological Assessment for Construction Projects

Requires Federal agencies or their designees to prepare Biological Assessment (BA) for construction projects1/ only. The purpose of the BA is to identify any proposed and/or listed species which are/is likely to be affected by a construction project. The process is initiated by a Federal agency in requesting a list of proposed and listed threatened and endangered species (List attached). The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the species list, please verify the accuracy of the list with our Service. No irreversible commitment of resources is to be made during the BA process which would result in violation of the requirements under Section 7(a) of the Act. Planning, design, and administrative actions may be taken; however, no construction may begin.

To complete the BA, your agency or its designee should: (1) conduct an on-site inspection of the area to be affected by the proposal which may include a detailed survey of the area to determine if the species is present and whether suitable habitat exists for either expanding the existing population for potential reintroduction of the species; (2) review literature and scientific data to determine species distribution, habitat needs, and other biological requirements; (3) interview experts including those within FWS, National Marine Fisheries Service, State conservation departments, universities and others who may have data not yet published in scientific literature; (4) review and analyze the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; (5) analyze alternative actions that may provide conservation measures; and (6) prepare a report documenting the results, including a discussion of study methods used, any problems encountered, and other relevant information. Upon completion, the report should be forwarded to our Area Manager.

1/ "Construction Project" means any major Federal Action which significantly affects the quality of the human environment (requiring an EIS) designed primarily to result in the building or erection of man-made structures such as dams, buildings, roads, pipelines, channels, and the like. This includes Federal actions such as permits, grants, licenses, or other forms of Federal authorization or approval which may result in construction.

ATTACHMENT B

RESPONSE TO COMMENT LETTER NO. 12 (DEPARTMENT OF THE INTERIOR)

Comment: The impact statement does not adequately document the presence of important anadromous fish species or threatened or endangered species which occur in the project area.

Response: Pages II.3-F-7ff of ERDA-1538 (USERDA 1975) describe the fish population in the Hanford area of the Columbia River and the effects of Hanford operation on fish. No effluents are directly discharged to the river from the PUREX/UO_3 operations, therefore, no increase in impacts on the fish population is expected. Additionally, Section III 1.3.2.1 of ERDA-1538 describes the effects of water intake structures on the aquatic ecosystem. This section of ERDA-1538 indicates that the intakes for the 200 Area were designed according to U.S. Fish and Wildlife recommendations and have screens with continuous backwash capability to dislodge biota back to the river. No species of plant or animal registered as rare, threatened, or endangered is known to exist or depend on the habitats unique to the 200-Area plateau where the PUREX facility is located (see Section 4.3.5.7).

Comment: NRC[a] (sic) may begin a biological assessment of the Bald Eagle if it is determined that the resumption of operations of the PUREX/UO_3 facilities is a construction project.

Response: The PUREX/UO_3 facilities are located several miles inland from the roosting areas of the Bald Eagle and normal operations would have negligible impact on the raptors. More description of the raptorial population can be found in ERDA-1538 (USERDA 1975) page 11.3-G-19ff, and in Fitzner 1980.[b] DOE feels that no biological assessment of PUREX/UO_3 operations on the Bald Eagle is necessary because the operation of PUREX/UO_3 facilities is not a construction project, and essentially constitutes resumption of previously employed operations.

(a) NRC has no official responsibility relative to operation of the PUREX/UO_3 facilities.

(b) Fitzner, R. E., et al. 1980. Raptors of the Hanford Site. PNL-3212, Pacific Northwest Laboratory, Richland, Washington.

3.0 ERRATA SHEETS

Required changes to the DEIS are identified in this section. The location of the changes in the DEIS are specified by page and where possible paragraph and line down from the beginning of the paragraph. To assist the reader, the text is shown as it "now reads", how it should read, and the reason for the change (e.g., clarification, technical correction, response to comment, or factual correction).

ERRATA SHEETS

General Changes

"DEIS" should be changed to "FEIS" where it occurs in this statement.

"Draft Environmental Impact Statement" should be changed to "Final Environmental Impact Statement" where it occurs in this statement.

"Draft EIS" should be changed to "Final EIS" where it occurs in this statement.

Page 1.2 and 3.33, Tables 1.1 and 3.8

Column under "Potential Advantages" for the No Action Alternative.

Now reads: "Could reduce amounts to be released depending on future decisions."

Should read: "Could reduce the amounts of effluent released depending on future decisions."

Reason: Clarification.

Column under "Potential Disadvantages" for the Processing Fuel Offsite Alternative.

Now reads: "No significant reduction in releases to environment."

Should read: "No significant reduction in effluent releases to environment."

Reason: Clarification.

Page 1.3, Footnote (a)

Now reads: "fuel 1) whose isotopic composition is similar to that of N-Reactor irradiated fuel analyzed in this EIS, and 2) whose environmental consequences for processing at the Hanford PUREX/UO_3 facilities would not exceed the consequences described in this EIS."

Should read: "fuel with 1) fission product content similar to that of N-Reactor irradiated fuel analyzed in this EIS, and 2) environmental consequences for processing at the Hanford PUREX/UO_3 facilities that would not exceed the consequences described in this EIS."

Reason: Technical correction.

Page 1.3, Paragraph 2, Line 2

Page 3.1, Footnote (a), Line 6

Now reads: "other fuels that are similar to N-Reactor fuel"

Should read: "other fuels that are similar in fission product content to N-Reactor fuel"

Reason: Technical correction.

ERRATA SHEET

Page 3.3

Replace Figure 3.1 with the Figure shown below.

Reason: Factual correction.

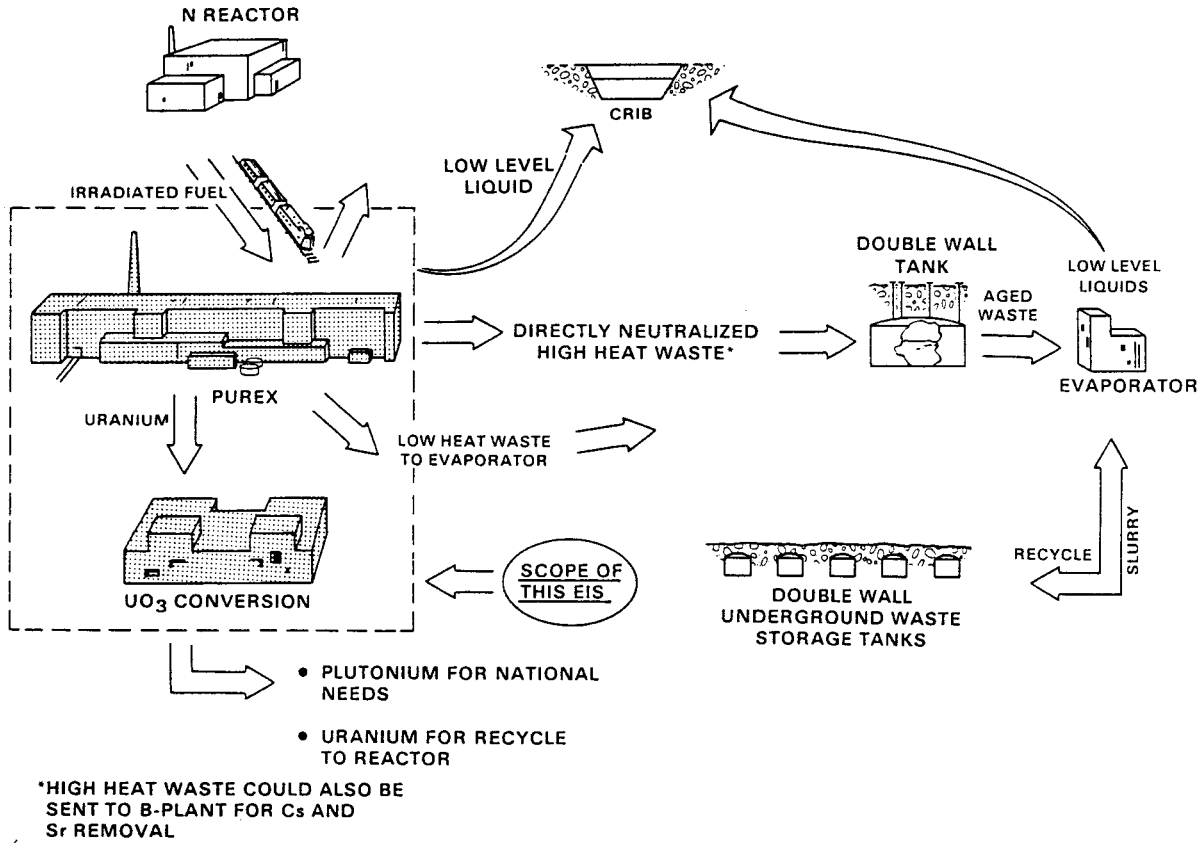

FIGURE 3.1. PUREX/UO_3 Facilities and Other Hanford Facilities

ERRATA SHEET

Page 3.6; Page 3.7, Section 3.1.1.3; Page 3.10, Paragraph 2; Page 3.15, Section 3.1.5.2; Page A.7, Section A.1.6; Page A.12, Section A.1.8; Page A.13; Page A.14; Page A.15; Page A.16.

Now reads: The EIS indicates that neptunium will be recovered.

Should read: Since preparation of the DEIS the decision was made to discard rather than recover neptunium. The neptunium will remain with the CAW which exits the PUREX plant and is stored in underground double-walled tanks.

Reason: Factual correction.

Page 3.18, Section 3.1.10. bottom of page

Now reads: "1) process and scrubber waste, 2) steam condensates"

Should read: "1) process and ammonia scrubber waste condensates,

"2) steam condensates"

Reason: Factual correction.

Page 4.2, Figure 4.2

Substitute: "U.S. Fish and Wildlife Service" for "U.S. Bureau of Sport Fisheries and Wildlife."

Reason: Factual correction.

Page 4.12, Section 4.4.5, Paragraph 1

Now reads: "Our Lady of Lourdes Hospital in Pasco and Kadlec Hospital in Richland are undertaking an expansion of bed capacity so that total capacity would rise to 340 to 360."

Should read: "Our Lady of Lourdes Hospital in Pasco, Kadlec Hospital in Richland and Kennewick General Hospital in Kennewick are all undertaking efforts to expand the total bed capacity to 420 to 440."

Reason: Response to comment letter.

Page 4.13, Section 4.4.7

Now reads: "The U.S. Department of the Interior (1979) lists 20 historic sites for Benton, Grant, and Franklin Counties. Among these, the Ryegrass Archeological District is listed as being in the "Hanford Works Reservation" (since 1978 designated as "Hanford Site") along the Columbia River. Other historic sites listed are: Paris Archeological Site, Hanford Island Archeological Site, Hanford North Archeological District, Locke Island Archeological District, Rattlesnake Springs Sites, Snively Canyon Archeological District, Wooded Island Archeological District, and Savage Island Archeological District. A number of archeological sites within the Site boundaries have been identified (Rice 1968a,b) and are described in detail in USERDA (1975, p. II.3-A-14)"

ERRATA SHEET

Should read: "The U.S. Department of the Interior National Register of Historic Places (1979) lists 20 historical sites for Benton, Grant, and Franklin Counties, of which nine are on the Hanford Site. Seven of these are along the Columbia River while two are on the Arid Lands Ecology Reserve. A number of archeological sites within the Site boundaries have been identified (Rice 1968a,b) and are described in detail in USERDA (1975, p. II.3-A-14)."

Reason: Clarification.

Page 4.13, Section 4.4.7, first sentence

Now reads: "The Arid Lands Ecology (ALE) Reserve with the rest of the Hanford Site, exclusive of the operating areas (approximately 6 percent) was recently designated as a National Environmental Research Park (NERP)."

Should read: "The Arid Lands Ecology (ALE) Reserve with the rest of the Hanford Site, exclusive of the operating areas (approximately 6 percent) was designated as a National Environmental Research Park (NERP) in 1977."

Reason: Clarification.

Page 5.16, Table 5.7, Footnote (a)

Now reads: "All distances are one-way."

Should read: "These distances are the summation of all individual shipments during the year and include one-way distances only. The distance of the return trip, during which no nuclear materials are transported, is not included."

Reason: Response to comment letter.

Page 5.19, Section 5.1.4.3, Paragraph 3; Page B.2, Section B.2.1

Now reads: "cooled for only 25 days"

Should read: "cooled for only 18 days"

Reason: Factual correction.

Page 5.19, Section 5.1.4.3, Bullet 5

Now reads: "have been installed at both N-Reactor and PUREX"

Should read: "have been installed at PUREX$^{(c)}$" and add footnote (c) as follows: "UNC, operators of the N-Reactor, are considering a similar installation."

Reason: Factual correction.

Page 8.4, Double-Shell Slurry Definition

Now reads: "The suspended solids, primarily sodium nitrate, experience extremely long settling times, and are almost totally soluble upon dissolution."

Should read: "The suspended solids, primarily sodium nitrate, experience extremely long settling times, and are almost totally soluble."

Reason: Technical correction.

Page 8.5, Fuel, Mark 1-A Definition

Now reads: "A type of N-Reactor fuel with an enrichment of 1.25 percent."

Should read: "A type of N-Reactor fuel element whose outer cylinder is enriched to 1.25 percent ^{235}U and whose inner cylinder is enriched to 0.95 percent ^{235}U."

Reason: Clarification.

Page 8.5, Fuel, Mark IV Definition

Now reads: "A Type of N-Reactor fuel with an enrichment of 1.25 percent ^{235}U."

Should read: "A type of N-Reactor fuel element whose inner and outer cylinders are enriched to 0.95 percent ^{235}U."

Reason: Clarification.

Page 8.5 - Add the Definition for Genetic Effects

"Genetic Effects: Radiation-induced effects (primarily mutations) that affect the descendants of the exposed individual. Also called "hereditary" effects."

Reason for addition: Response to comment.

Page 8.9 - Add the Definition for Somatic Effects

"Somatic Effects: Radiation-induced effects that become manifest in the exposed individual himself. At low doses and dose rates, these are primarily delayed cancers."

Reason for addition: Response to comment.

Page A.6, Section A.1.5.3, Paragraph 1

Now reads: "The specific gravity of the ammonia scrubber waste concentrator bottoms is monitored and allowed to increase to a predetermined level before shutdown, cooling, and transfer to the waste receiver. A radioactivity (^{95}Zr, ^{95}Nb, ^{106}Ru) concentration limit for the bottoms is also a criterion for emptying the concentrator."

Should read: "The ^{90}Sr concentration in the condensate is monitored and allowed to increase to a predetermined level before shutdown, cooling, and transfer of the ASW concentrator bottoms to the waste receiver. Prior to transfer, the bottoms are sampled for specific gravity and radionuclide content."

Reason: Factual correction.

Page A.6, Section A.1.5.4, Paragraph 1

Now reads: "each dissolver offgas system includes a dissolver tower, gas heaters, silver reactor,"

ERRATA SHEET

Should read: "each dissolver offgas system includes a dissolver tower, steam and electric offgas heaters, silver reactor,"

Reason: Factual correction.

Page A.9, Section A.1.6.2, Paragraph 3, Line 4

Now reads: ", removes any nitric acid present."

Should read: ", removes most of the nitric acid present."

Reason: Factual correction.

Page A.10

Replace Figure A.3 with the figure shown below.

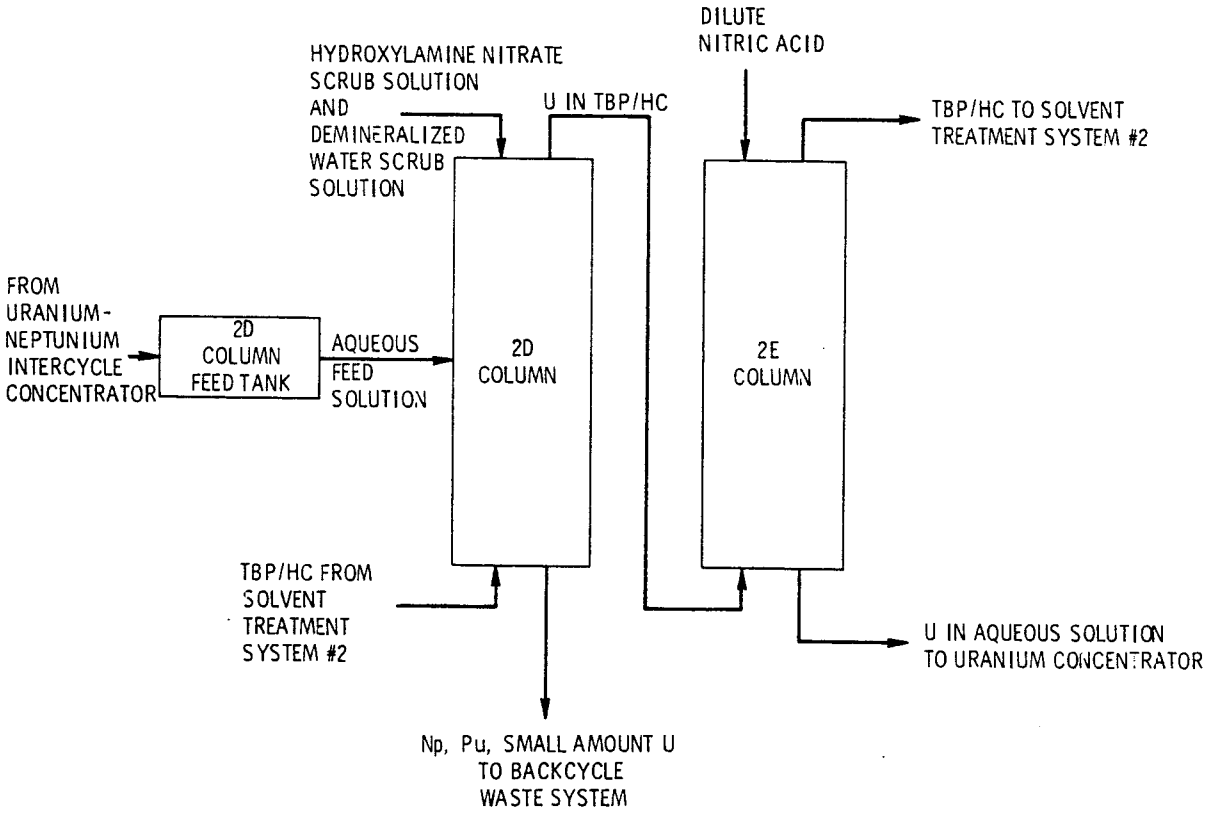

FIGURE A.3. Uranium Final Cycle Process Flow Diagram

Reason: Factual correction.

ERRATA SHEET

Page A.27, Section A.2.1.8, Last Paragraph, Lines 5 and 6

Now reads: "Emergency power is available from the 284-E powerhouse steam turbine generator,"

Should read: "Alternate power is available from diesel generators; transfer of the switchgear to the alternate power supply is accomplished by batteries. These batteries would also power emergency lighting and maintain the fire detection system if the alternate system failed."

Reason: Factual correction.

Page A.30, Section A.2.2.2, Line 3

Now reads: "emergency discharge to a covered, lined trench"

Should read: "emergency discharge to a lined trench"

Reason: Factual correction.

Page A.31, Section A.2.2.3, Paragraph 3

Now reads: "is automatically diverted to a covered, lined retention trench (216-A-42)"

Should read: "is automatically diverted to a lined retention trench"

Reason: Factual correction.

Page A.32, Power Supply, Paragraph 1

Now reads: "Emergency power supplied by the 284-W powerhouse...Emergency batteries are in place to maintain emergency switching capabilities."

Should read: "Alternative power is supplied by the 284-W powerhouse...Batteries are in place to maintain switching capability."

Reason: Response to comment.

Page A.32, Compressed Air, Paragraph 3

Now reads: "An emergency diesel engine-driven compressor"

Should read: "A diesel engine-driven compressor"

Reason: Factual correction.

Page A.41, Section A.3.1.6, Paragraph 1, Line 3

Now reads: "Air from the room surrounding the storage vessels"

Should read: "Air from the room surrounding the M-cell storage vessels"

Reason: Factual correction.

Page A.41, Section A.3.1.6, Paragraph 2

Now reads: "All glovebox air exhausts through one stage of HEPA filtration at the gloveboxes and discharges through the PR room exhaust system to the PUREX ventilation stack."

ERRATA SHEET

Should read: "All glovebox air exhausts through one stage of HEPA filtration at the gloveboxes, then discharges through two additional HEPA filter stages and the PR room exhaust stack 296-A-1."

Reason: Clarification.

Page A.41, Section A.3.1.6, Paragraph 3

Now reads: "just outside N cell and discharges through the West Sample Gallery exhaust system to the PUREX ventilation system for filtration and discharges through the main ventilation stacks."

Should read: "just outside N cell, then discharges through an additional HEPA filter stage and the West Gallery and R cell exhaust stack 296-A-7."

Reason: Clarification.

Page B.12, Section B.2.3

Units for the amounts of solution were omitted. These units should be liters (ℓ).

Should read: "6580ℓ of solution (4880ℓ organic, 1700ℓ aqueous)"

Reason: Technical correction.

Page B.17, Table B.8, First Criticality Accident Mentioned

Column under "Criticality Location"

Now Reads: "Plutonium Column Extraction

Should read: "1BX column"

Reason: Technical correction.