



Department of Energy

Washington, DC 20585

September 14, 2010

Mr. Robert Van Namen
Senior Vice President
United States Enrichment Corporation
6903 Rockledge Drive
Bethesda, Maryland 20817-1818

Dear Mr. Van Namen:

This is in response to your July 19, 2010, request for exemption from title 10, Code of Federal Regulations, part 835 (10 C.F.R. 835), *Occupational Radiation Protection*.

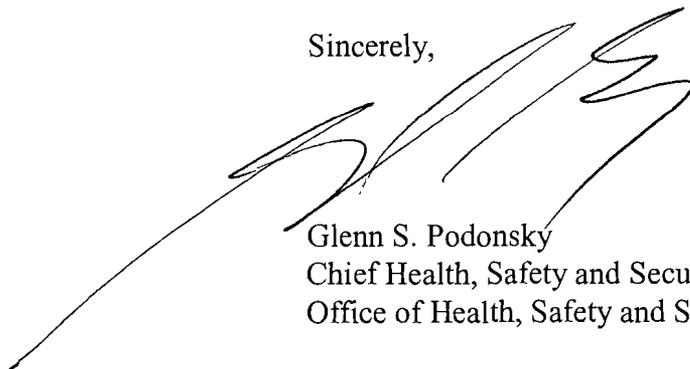
On February 23, 1995, the Department of Energy (DOE) issued the United States Enrichment Corporation (USEC) an Exemption Decision, which allowed USEC to perform work at the Portsmouth Gaseous Diffusion Plant (PORTS GDP) predicated on the certification of the plant by the Nuclear Regulatory Commission (NRC), with specified areas regulated by DOE under a Regulatory Oversight Agreement (ROA). As part of the process of transitioning the PORTS GDP primary uranium enrichment processing facilities from the current shutdown condition to decontamination and decommissioning (D&D), DOE Portsmouth/Paducah Project Office (DOE PPPO) has requested that USEC complete specified tasks. These tasks include: (1) deleasing the three enrichment process buildings and the associated feed, sampling, and transfer buildings; and (2) performing transition, surveillance and maintenance, and hazard reduction activities. These tasks will continue until the D&D contractor takes over operation of these facilities. With the deleasing of these facilities, the activities in these facilities will no longer be regulated by NRC or by the DOE ROA.

USEC is requesting an Exemption Decision for PORTS GDP activities, which will remain in effect until a D&D contractor is hired. DOE PPPO and the DOE Office of Environmental Management concur with the exemption request.



From July 7-8, 2010, DOE conducted an assessment to evaluate the adequacy of regulatory controls for PORTS GDP radiation protection activities. The assessment concluded that the regulatory controls for PORTS GDP radiation protection activities are adequate as indicated in the Technical Review (enclosure 1). Based on this information, we are issuing the USEC Exemption Decision (enclosure 2).

Sincerely,



Glenn S. Podonsky
Chief Health, Safety and Security Officer
Office of Health, Safety and Security

Enclosures

cc w/enclosures:

Radiological Control Coordinating Committee
Price Anderson Amendments Act Coordinator –
Oak Ridge Office (OR)
Randall M. Devault, DOE/OR
Paula S. Rhea, DOE/PPPO
Anthony L. Takacs, DOE/PPPO
M. Judson Lilly, DOE/PPPO
William E. Murphie, DOE/PPPO
Dae Y. Chung, DOE/EM-1
Joanne D. Lorence, DOE/EM-51
Claude E. Magnuson, DOE/EM-51
Warren F. Miller, Jr., DOE/NE-1
Docketing Clerk, DOE/HS-40

Technical Review

**United States Enrichment Corporation
Title 10, Code of Federal Regulations, Part 835
Exemption Request**

On July 19, 2010, United States Enrichment Corporation (USEC) submitted a request for relief from the requirements contained in title 10, Code of Federal Regulations, part 835 (10 C.F.R. 835), *Occupational Radiation Protection*, as they pertain to selected areas of the Portsmouth Gaseous Diffusion Uranium Enrichment Plant (GDP).

As discussed below, temporary relief from the provisions of 10 C.F.R. 835 is justified. The Department of Energy's (DOE) Office of Worker Safety and Health Policy recommends providing temporary exemption to 10 C.F.R. 835, with conditions, as specifically discussed in this technical review.

Discussion of Exemption Request

General

In particular, USEC requested a temporary exemption from requirements contained in 10 C.F.R. 835 on the condition that USEC follow plans, programs, and procedures already implemented at Portsmouth GDP in compliance with U.S. Nuclear Regulatory Commission (NRC) requirements in 10 C.F.R. 20, *Standards for Protection Against Radiation*.

Requirements from which Exemption is Sought

USEC requests temporary exemption from all parts of 10 C.F.R. 835.

Results of Analysis

Discussion

On February 23, 1995, DOE issued USEC an Exemption Decision, which allowed USEC to perform work at GDP predicated on the certification of the plant by NRC.

The Exemption Decision was valid until June 30, 2009. On June 15, 2009, DOE issued an extension of the Exemption Decision, which remains in effect until the expiration of the current NRC Certificate of Compliance for the Portsmouth GDP (i.e., until December 31, 2013).

After September 30, 2010, USEC will perform activities in USEC-leased spaces that no longer are covered by an NRC Certificate of Compliance. USEC is requesting an Exemption Decision for GDP activities, which will remain in effect until a decontamination and decommissioning (D&D) contractor is hired.

USEC identified several areas where it would be overly burdensome to transition from following NRC (10 C.F.R. 20 et al.) to DOE requirements (10 C.F.R. 835). For example, under 10 C.F.R. 835, a DOE Laboratory Accreditation Program (DOELAP) accredited external dosimetry program is required. This DOELAP accreditation process includes utilizing a dosimeter from a DOELAP accredited process and an onsite program assessment and accreditation. The onsite assessment includes areas, such as review of radiation hazards and external radiation monitoring needs, quality control program content and implementation, dosimetry personnel training/credentials, records processing, results storage, and other dosimetry program issues. Under 10 C.F.R. 20, a National Voluntary Laboratory Accreditation Program (NVLAP) accredited external dosimetry program is required. This NVLAP accreditation process differs from the DOELAP accredited process and transition to DOELAP accreditation would be time consuming and costly.

Implementing DOELAP would require:

- a new contract with a different supplier;
- passing an onsite assessment;
- developing/implementing vendor supplied software and interfaces; and
- developing a new DOE exposure reporting process.

However, USEC currently utilizes an NVLAP-accredited external dosimetry service to provide dosimeters and processing services for GDP activities. The overall external dosimetry system is compliant with 10 C.F.R. 20 and described in implementing procedures. This program has been inspected by NRC to verify adequate safety and compliance with NRC requirements. Due to the low levels of routine exposures, this monitoring is performed principally to demonstrate programmatic exposure control effectiveness.

The low cumulative exposures for the site make it unnecessary from a safety standpoint to change from NVLAP to DOELAP external dosimetry programs. Utilizing the NVLAP-based external dosimetry system will meet all of the performance objectives of the DOE regulations with respect to controlling and monitoring exposure to external radiation hazards. The average annual external penetrating dose for 2009 for GDP operation and support activities of USEC GDP was less than 2.2 mrem. The highest of these doses for 2009 was less than 150 mrem.

The continued use of the NVLAP accredited external dosimetry would permit the same demonstration of programmatic exposure control effectiveness as would a DOELAP accredited system. Required collective and annual individual dose reporting systems and procedures exist. Using these systems, reports can be generated to meet needed DOE exposure reports for personnel. As has been the case since NRC Certification, both DOE and NRC determined that there was no need to separate incidental exposures due to personnel performing limited work outside of their primary work assignment area into DOE and NRC exposures. Continuing this

practice, an individual's exposure would be reported under the DOE exposure reporting system for applicable personnel.

While there are many similarities between NRC's and DOE's occupational radiation protection requirements, the many differences would make converting to DOE requirements for a short time period very time consuming and costly. Some of these differences, in addition to the above, include:

- DOE uses different derived air concentrations, surface contamination, sealed source accountability and radioactive material-labeling values.
- DOE requires radiobioassay accreditation.
- DOE requires a DOE-approved, written Radiation Protection Program.
- DOE uses more recently published international dose quantities, units, and terminology.
- DOE regulates all occupational exposure to ionizing radiation; e.g., including machine produced radiation.
- DOE defines the extremity differently.
- DOE has more prescriptive training and contamination control requirements.

In view of the above information, USEC requested an exemption to 10 C.F.R. 835 to permit GDP to continue following NRC and the State of Ohio requirements for occupational radiation protection.

USEC states that after September 30, 2010, work is to be conducted by USEC employees currently working under procedures and programs written in accordance with NRC radiation protection requirements. Accordingly, the workers are already trained in accordance with, and knowledgeable of, these procedures and programs.

The exemption request discusses the burden that would result in needing to rewrite the radiation protection procedures and programs to meet 10 C.F.R. 835 requirements and the need to retrain USEC employees in these procedures and programs. The request states that the burden would not be justified because of the relatively short time period.

As part of the process of transitioning the PORTS GDP primary uranium enrichment processing facilities from the current shutdown condition to D&D, DOE Portsmouth/Paducah Project Office (DOE PPPO) requested that USEC complete specified tasks. These tasks include: (1) deactivating the three enrichment process buildings and the associated feed, sampling, and transfer buildings; and (2) performing transition, surveillance and maintenance, and hazard reduction activities. These tasks will continue until the D&D contractor takes over operation of these facilities. With the deactivating of these facilities, the activities in these facilities will no longer be regulated by NRC or by the DOE Regulatory Oversight Agreement (ROA). However, since the NRC Certificate will still be regulating a number of USEC nuclear operations during the same time that the transition of the Former Uranium Enrichment Facilities (FUEF) is ongoing, both USEC and DOE PPPO agree that the continued use of the existing programs that provide compliance with NRC requirements would allow for the safest conditions for the plant workers and the public. As noted in the exemptions previously referenced that allowed for use of NRC program

requirements through the DOE ROA, the implemented nuclear safety requirements and safety management programs that provide compliance with NRC 10 C.F.R. 76 requirements provide adequate safety for DOE operations in these facilities. In order to implement this regulatory and safety transition, DOE PPPO contracted with USEC to prepare a Basis for Interim Operations (BIO) that would utilize the existing safety requirements and management programs that are required for compliance with the NRC Certificate. In general, while the program terminology between the DOE and NRC differ in a number of respects, the performance requirements of providing adequate safety to the public, the worker, and the environment and assuring the common defense and security are similar. However, since verbatim compliance with all DOE requirements of 10 C.F.R. 835 will not be in place, an exemption from these requirements is needed. Thus, USEC requests an exemption from 10 C.F.R. 835 for the duration of the transition operations governed by the BIO and associated authorization basis documents.

The assurance of radiological protection during conduct of nuclear activities under DOE regulation in the BIO-regulated areas will continue to be provided by USEC compliance with, and DOE enforcement of, the binding nuclear safety requirements contained in the DOE-approved Authorization Basis (AB), including the BIO. This is similar to the previous use of the ROA, which directly referenced the NRC Certificate requirements. DOE has previously determined that compliance with the terms of the ROA, based on compliance with the Programs, Plans, and associated implementing procedures and controls specified in the NRC Certificate of Compliance, would provide worker protection from radiological hazards associated with the activities in the FUEF that will now be regulated under the BIO. The BIO and associated AB documents are being prepared for review and approval by DOE PPPO with concurrence of DOE Headquarters. The DOE objective is that the AB be approved for implementation prior to September 30, 2010.

Concurrence

Temporary relief from the requirements in 10 C.F.R. 835, with conditions, should be provided. This is in recognition of the fact that USEC will continue to adhere to a comparable set of regulations from NRC and the State of Ohio for occupational radiation protection.

Conclusion

The above exemption meets the criteria for granting a temporary exemption under 10 C.F.R. 820.62:

1. Granting this exemption would be authorized by law.
2. This exemption would not present an undue risk to public health and safety, the environment, or facility workers.
3. The exemption would be consistent with the safe operation of a DOE nuclear facility.

4. In granting this exemption pursuant to §820.62(d)(2), DOE recognizes that special circumstances exist that justify temporary exemption because application of the requirements in the particular circumstances would not serve, or is not necessary, to achieve its underlying purpose or would result in resource impacts that are not justified by the safety improvements.

Based on the above, the Office of Worker Safety and Health Policy concurs with the request for temporary exemption, with conditions.

1. USEC should operate PORTS GDP in accordance with the radiation protection requirements in:
 - 10 C.F.R. 19, *Notices, Instructions and Report to Workers: Inspection and Investigations*;
 - 10 C.F.R. 20, *Standards for Protection against Radiation*;
 - 10 C.F.R. 34, *Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations*;
 - 10 C.F.R. 76, *Certification of Gaseous Diffusion Plants – Subpart D–Safety*;
 - 10 C.F.R. 30, 32, 36, 39, and 40 for the control, inventory, and leak testing of sealed radioactive sources used at GDP; and
 - State of Ohio, Department of Health, licensing requirements for radiation-producing devices.
2. USEC should update its radiation protection programs in accordance with 10 C.F.R. 20.1101 to reflect PORTS GDP activities.
3. USEC should substitute DOE for NRC when NRC regulations require notification, approvals, submission of information and documents, and reporting to NRC.
4. Prior to implementing this Exemption Decision, USEC should finalize and provide DOE a copy of the FUEF BIO.
5. This temporary exemption should remain in effect as long as the BIO remains in effect or until a D&D contractor takes over operation of the FUEFs under a DOE-approved radiation protection program.

The Office of Worker Safety and Health Policy also recommends that the Exemption Decision state that, based on this and subsequent evaluation, DOE reserves the right to modify the conditions of this Exemption Decision.

EXEMPTION DECISION

Pursuant to title 10, Code of Federal Regulations, part 820.61 (10 C.F.R. 820.61), the Chief Health, Safety and Security Officer is authorized to exercise authority on behalf of the U.S. Department of Energy (DOE) with respect to requests for exemptions from nuclear safety rules relating to radiological protection of workers, the public, and the environment.

Under the terms set forth in 10 C.F.R. 820.61, on February 23, 1995, DOE responded to a request for a temporary exemption from the provisions contained in 10 C.F.R. 835. The response provided for a temporary Exemption Decision for a 12-month period and was subsequently extended. The exemption permitted United States Enrichment Corporation (USEC) workers to perform radiological activities associated with the Portsmouth Gaseous Diffusion Plant (PORTS GDP) site.

As part of the process of transitioning the PORTS GDP primary uranium enrichment processing facilities from the current shutdown condition to decontamination and decommissioning (D&D), DOE Portsmouth/Paducah Project Office (DOE PPPO) has requested that USEC: (1) delease the three enrichment process buildings and the associated feed, sampling and transfer buildings; and (2) perform transition, surveillance and maintenance, and hazard reduction activities. In your letter of July 19, 2010, you requested a temporary Exemption Decision valid until the D&D contractor takes over operation of these facilities. DOE PPPO contracted with USEC to prepare a Basis for Interim Operations (BIO) that would utilize the existing safety requirements and management programs, which are required for compliance with the Nuclear Regulatory Commission (NRC) Certificate. The assurance of radiological protection during conduct of nuclear activities under DOE regulation in the BIO regulated areas will continue to be provided by USEC compliance with, and DOE enforcement of, the binding nuclear safety requirements contained in the DOE-approved Authorization Basis, including the BIO.

I find that the exemption criteria of 10 C.F.R. 820.62 have been met. Also, the requested exemption is not prohibited by law; will not present an undue risk to the public health and safety, the environment, or facility workers; and is consistent with the safe operation of a DOE nuclear facility. I have determined that granting a temporary exemption meets the special circumstances that constitute a sufficient basis upon which to grant this Exemption Decision with conditions. Specifically, not granting the exemption would result in resource impacts, which are not justified by any safety improvement.

On the basis of the foregoing, I hereby am issuing the Exemption Decision for USEC temporary exemption from 10 C.F.R. 835. The Exemption Decision applies to the Former Uranium Enrichment Facilities (FUEF) at PORTS GDP listed in Section 2.0.3.3 of the BIO. The following conditions apply:

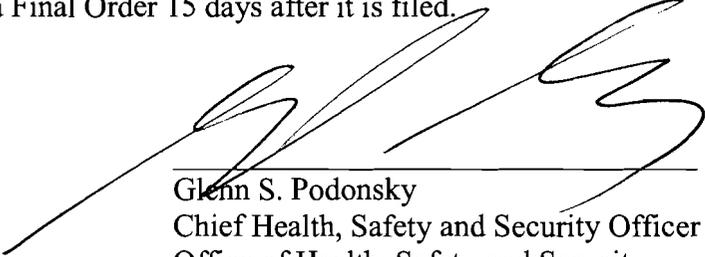
Conditions:

1. USEC shall operate PORTS GDP in accordance with the radiation protection requirements in:
 - 10 C.F.R. 19, *Notices, Instructions and Report to Workers: Inspection and Investigations*;
 - 10 C.F.R. 20, *Standards for Protection Against Radiation*;
 - 10 C.F.R. 34, *Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations*;
 - 10 C.F.R. 76, *Certification of Gaseous Diffusion Plants – Subpart D – Safety*;
 - 10 C.F.R. 30, 32, 36, 39, and 40 for the control, inventory, and leak testing of sealed radioactive sources used at GDP; and
 - State of Ohio, Department of Health, licensing requirements for radiation-producing devices.
2. USEC shall update its radiation protection programs in accordance with 10 C.F.R. 20.1101 to reflect PORTS GDP activities.
3. USEC shall substitute DOE for NRC when NRC regulations require notification, approvals, submission of information and documents, and reporting to NRC.
4. Prior to implementing this Exemption Decision, USEC shall finalize and provide DOE a copy of the FUEF BIO.
5. This temporary exemption shall remain in effect as long as the BIO remains in effect or until a D&D contractor takes over operation of the FUEF under a DOE-approved radiation protection program.

As always, based on this and subsequent evaluations, DOE reserves the right to modify the conditions of this Exemption Decision upon notice to USEC. As such, DOE reserves the right to perform periodic inspections of activities covered by the scope of this Exemption Decision.

Pursuant to 10 C.F.R. 820.66, USEC has 15 days from the date of the filing of this decision to file a Request to Review with the Secretary of Energy. The Request to Review shall state specifically the respects in which the exemption determination is claimed to be erroneous, the grounds of the request, and the relief requested. If no Request to Review is submitted, the Exemption Decision becomes a Final Order 15 days after it is filed.

9/13/10
Date



Glenn S. Podonsky
Chief Health, Safety and Security Officer
Office of Health, Safety and Security



Department of Energy

Washington, DC 20585

August 31, 2010

MEMORANDUM FOR GLENN PODONSKY
CHIEF HEALTH, SAFETY AND SECURITY OFFICER
OFFICE OF HEALTH, SAFETY AND SECURITY

FROM: DAE Y. CHUNG 
PRINCIPAL DEPUTY ASSISTANT SECRETARY
FOR ENVIRONMENTAL MANAGEMENT

SUBJECT: United States Enrichment Corporation Request for
Exemption from 10 CFR 835 Requirements During Facility
Transition

The Office of Environmental Management (EM) requests your approval of the attached request for exemption from 10 CFR 835, "Occupational Radiation Protection." EM and Portsmouth Paducah Project Office (PPPO) endorse this exemption request, which was prepared by United States Enrichment Corporation (USEC). This request is similar to an exemption request previously submitted by USEC which was granted by the Office of Health, Safety and Security on June 15, 2009.

This exemption request covers three enrichment process buildings and the associated UF6 feed, sampling, and transfer buildings (attached). These facilities are shut down and in the process of transitioning to Decontamination and Decommissioning (D&D).

Since these facilities are being transitioned they are no longer regulated by the Nuclear Regulatory Commission (NRC). Therefore, 10 CFR 835 is applicable during (and after) this transition period. USEC, with the approval of PPPO and EM, is requesting an exemption from 10 CFR 835 because they intend to maintain the radiation protection program as required by 10 CFR 20, "Standards for Protection Against Radiation," during the transition period even though these facilities are no longer regulated by NRC.

This exemption is warranted for the transition period because 10 CFR 20 is very similar to 10 CFR 835, the current radiation protection program provides similar worker protection, and it is more effective to maintain the current program than to transition to 10 CFR 835 for a short interim period. The Office of Health, Safety, and Security reviewed the current radiation protection program at USEC in July 2010 and found that it provides adequate worker protection.

Once these facilities are transitioned to D&D, this exemption would expire and the facilities would be regulated under 10 CFR 835 by the D&D contractor.

Since this exemption request meets the requirements of 10 CFR 820, "Procedural Rules for DOE Nuclear Activities," and a similar exemption granted in the past, I recommend that you grant this request.

If you have any further questions, please contact Dr. Steven L. Krahn, Deputy Assistant Secretary for Safety and Security Program at (202) 586-5151.

Attachment

cc: C. Lagdon, CNS
D. Chung, EM-2
M. Gilbertson, EM-3 (Acting)
S. Krahn, EM-20
C. Wu, EM-21
J. Poppiti, EM-21
J. Rovira, EM-20

United States Government

Department of Energy
Portsmouth/Paducah Project Office

memorandum

DATE: JUL 30 2010

REPLY TO
ATTN OF: PPPO:Takacs

PPPO-03-967745-10

SUBJECT: UNITED STATES ENRICHMENT CORPORATION 10 CFR 835 EXEMPTION REQUEST

THROUGH: James Poppiti, Chemical Engineer, Office of Safety Management, EM-22/CLVRLF

TO: Glenn S. Podonsky, Chief Health, Safety, and Security Officer, Immediate Office of the Chief Health, Safety and Security Officer, HS-1/FORS

Reference: Letter from R. Van Namen to W. Murphie, "DOE 10-0031, Request for Price-Anderson Amendments Act (PAAA) Exemption," dated July 19, 2010

By letter dated July 19, 2010 (Attachment 1), the United States Enrichment Corporation (USEC) submitted a request to my office for exemption relief from the requirements contained in 10 CFR Part 835, "Occupational Radiation Protection." As part of the process of transitioning the Portsmouth Gaseous Diffusion Plant primary uranium enrichment processing facilities from the current shutdown condition to Decontamination and Decommissioning (D&D), The Department of Energy (DOE) has requested that USEC de-lease the Former Uranium Enrichment Facilities, which includes three enrichment process buildings and the associated UF6 feed, sampling and transfer buildings. USEC will perform transition, surveillance and maintenance, and hazard reduction activities for a short period of time and until the D&D contractor takes over operation of these facilities. We expect the transition to be complete within 3-6 months, absent any unusual procurement situations. In lieu of 10 CFR Part 835 requirements, USEC proposes to follow their current plans, programs, and procedures which are in compliance with U.S. Nuclear Regulatory Commission requirements in 10 CFR Part 20, "Standards for Protection Against Radiation." The Exemption from 10 CFR 835 is requested for the duration of the transition activities authorized by the Basis for Interim Operations (BIO) and associated authorization documents.

Members of my staff have been coordinating the processing of the exemption request with staff in the Office of Health, Safety and Security. We further recommend approval of the USEC request of their 10 CFR Part 835 (Occupational Radiation Protection) Exemption Decision. If you concur with this recommendation, we request that you issue the requested extension by August 30, 2010. Please advise us of your decision.

Should you have any questions regarding this request, please call me at (859) 219-4001, or have a member of your staff contact Tom Hines of my staff at (270) 441-6829.



William E. Murphie
Manager
Portsmouth/Paducah Project Office

Mr. Poppiti

-2-

PPPO-03-967745-10

Attachment:

USEC July 19, 2010 letter, DOE 10-0031 Request for Price-Anderson Amendments Act
(PAAA) Exemption

cc w/attachment:

T. Hines, PPPO/PAD

T. Takacs, PPPO/PORTS

P. O'Connell, HS-11/MDLBRK



Robert Van Namen
Senior Vice President

301-564-3312 *phone*
301-564-3429 *fax*

July 19, 2010
DOE 10-0031

Mr. William Murphie
U.S. Department of Energy
Portsmouth/Paducah Project Office
1017 Majestic Drive, Suite 200
Lexington, KY 40513

Request for Price-Anderson Amendments Act (PAAA) Exemption

Dear Mr. Murphie:

The Department of Energy issued approval (Letter from Parks to Wooley, dated December 11, 1995) of a request from USEC (Letter from Wooley to Parks, dated September 9, 1994) for an exemption from certain DOE regulations issued under the Price-Anderson Amendments Act (PAAA) of 1988 with respect to USEC's operation of the Paducah, Kentucky and Portsmouth, Ohio Gaseous Diffusion Plants (GDPs). This exemption allowed for DOE regulation of USEC activities under the Regulatory Oversight Agreement (ROA) before and after NRC Certification of the GDPs. In April 2009, USEC requested a renewal of this PAAA Exemption for USEC operation in USEC leased areas under the DOE Lease ROA and that this exemption remain in effect until the expiration of the current NRC Certificate of Compliance for the Portsmouth GDP (December 31, 2013). DOE granted the request for exemption from title 10, Code of Federal Regulations, part 835 (10 CFR 835) and from title 10, Code of Federal Regulations, part 830, Subparts A and B (10 CFR 830) by letters in June 2009.

As part of the process of transitioning the PORTS GDP primary uranium enrichment processing facilities from the current shutdown condition to Decontamination and Decommissioning (D&D), DOE Portsmouth/Paducah Project Office has requested that USEC de-lease the Former Uranium Enrichment Facilities (FUEF), which includes the three enrichment process buildings and the associated UF₆ feed, sampling and transfer buildings, and perform transition, surveillance and maintenance, and hazard reduction activities until the D&D contractor takes over operation of these facilities. With the de-lease of these facilities, the activities in these facilities will no longer be regulated by the NRC or by the DOE ROA. However, since the NRC Certificate will still be regulating a number of USEC nuclear operations during the same time that the transition of the FUEF is ongoing, both USEC and DOE-PPPO agree that the continued use of the existing programs that provide compliance with NRC requirements would allow for the safest

Mr. William Murphie
July 19, 2010
GDP 10-0031, Page 2

conditions for the plant workers and the public. As noted in the exemptions previously referenced that allowed for use of the NRC program requirements through the DOE ROA, the implemented nuclear safety requirements and safety management programs that provide compliance with the NRC 10 CFR 76 requirements provide adequate safety for DOE operations in these facilities. In order to implement this regulatory and safety transition, DOE-PPPO contracted with USEC to prepare a Basis for Interim Operations (BIO) that would utilize the existing safety requirements and management programs that are required for compliance with the NRC Certificate. In general, while the program terminology between the DOE and NRC differ in a number of respects, the performance requirements of providing adequate safety to the public, the worker and the environment and assuring the common defense and security are similar. However, since verbatim compliance with all DOE requirements of 10 CFR 835 will not be in place, an exemption from these requirements is needed. Thus, USEC requests an exemption from 10 CFR 835 for the duration of the transition operations governed by the BIO and associated authorization basis documents.

The assurance of radiological protection during conduct of nuclear activities under DOE regulation in the BIO regulated areas will continue to be provided by USEC compliance with, and DOE enforcement of, the binding nuclear safety requirements contained in the DOE approved Authorization Basis (AB) including the BIO. This is similar to the previous use of the ROA, which directly referenced the NRC Certificate requirements. DOE has previously determined that compliance with the terms of the ROA, based on compliance with the Programs, Plans, and associated implementing procedures and controls specified in the NRC Certificate of Compliance, would provide worker protection from radiological hazards associated with the activities in the former uranium enrichment facilities that will now be regulated under the BIO. The BIO and associated AB documents are being prepared for review and approval by DOE-PPPO with concurrence of DOE-HQ. The DOE objective is that the AB be approved for implementation on September 30, 2010. Since the BIO and other AB documents are based on the existing NRC implemented programs and safety basis, the transition on the operating floor will be essentially seamless. A Certificate Amendment Request for the de-lease and turnover is being processed by the NRC. Since 1997, the PORTS GDP has been operated safely under the NRC Certificate utilizing existing site procedures, design information, safety basis, and safety management programs and plans implementing the NRC Certificate and regulatory requirements.

The current site Radiation Protection Program is in compliance with the radiation protection requirements in

- 10 CFR 19, "Notices, Instructions and Report to Workers: Inspection and Investigations";
- 10 CFR 20, "Standards for Protection Against Radiation";
- 10 CFR 34, "Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations";

Mr. William Murphie
July 19, 2010
GDP 10-0031, Page 3

- 10 CFR 76, "Certification of Gaseous Diffusion Plants – Subpart D – Safety";
- 10 CFR 30, 32, 36, 39, and 40 for the control, inventory, and leak testing of sealed radioactive sources used at GDP; and
- State of Ohio, Department of Health, licensing requirements for radiation-producing devices.

USEC updates its radiation protection program in accordance with 10 CFR 20.1101 to reflect the GDP activities.

USEC has substituted DOE for NRC when the NRC regulations require notification, approvals, submission of information and documents, and reporting to NRC.

Use of the new BIO and AB documents will continue to assure that all planned transition activities are carried out in a manner consistent with the safe operation of a DOE nuclear facility and will not present an undue risk to the public health and safety, facility workers or the environment.

USEC believes that the requested exemption: (a) is authorized by law; (b) poses no undue risk to the public health and safety; (c) is entirely consistent with safe operation of the GDP (including limited UF₆ operations, risk mitigation, surveillance and maintenance activities associated with the shutdown equipment, and the removal for eventual reuse by the Paducah Gaseous Diffusion Plant (PGDP) of some PORTS GDP equipment that is critical to maintaining the PGDP domestic uranium enrichment capability) ; and (d) is supported by numerous "special circumstances" as defined in 10 CFR 820, Subpart E.

In brief, the "special circumstances" are summarized as follows:

1. The NRC Certificate radiation protection requirements will remain in effect for a number of PORTS GDP facilities concurrently with the radiation protection requirements of the BIO.
2. Many of the USEC workers will perform work in both the DOE regulated former uranium enrichment facilities and in the remaining NRC regulated GDP facilities concurrently. There is improved safety if the workers on the floor are using one set of radiation protection requirements.
3. The DOE and NRC radiation protection (RP) requirements provide an equivalent level of safety. However, due to the differences in program structure, the resources required to modify the existing programs to meet the differences in terminology and regulatory approach and the resources required to implement such changes and run, in essence, two parallel programs would be significant and are not justified by any safety improvement. Some examples of such differences are discussed below:

During preparation of the BIO Radiation Protection Program description, we have identified a number of compliance issues for implementation of the Radiation Protection

Mr. William Murphie
July 19, 2010
GDP 10-0031, Page 4

Program in the FUEF. These issues do not involve the ability to provide adequate safety for operations. A number of differences exist between the DOE and NRC radiation protection requirements. For example, there are different Derived Air Concentration (DAC) values, surface contamination values, dose terminology and definitions, contamination control requirements and training requirements. Two areas illustrate the potential resource impacts from conversion of current RP program requirements to fully DOE compliant program requirements, posting terminology and DOE Laboratory Accreditation Programs (DOELAP) for the internal and external dosimetry monitoring programs.

ISSUES RELATED TO "CONTROLLED AREA" POSTING REQUIREMENTS

From a posting standpoint, the existing workplace postings are consistent with and compliant with the DOE program requirements. These include the postings and associated controls required for contamination areas, airborne radioactivity areas and radiation areas. However, a discrepancy exists with respect to higher level posting terminology. Specifically, NRC uses "Restricted Area" in an equivalent manner to DOE's use of "Controlled Area". Currently, each of these is used in respective NRC and DOE regulated areas at PORTS. However, these higher level postings of either "Restricted Area" or "Controlled Area" do not have different entry or control requirements. As noted above, the specific requirements for entry (e.g. training, dosimetry, anti-C PPE, exit monitoring, respiratory protection, etc.) into work areas are controlled via the lower level postings (e.g. Radiation Area, Airborne Radioactivity Area, Contamination Area, etc.). Thus, there would be no safety benefit to changing the area postings from "Restricted Area" to "Controlled Area". Also, the GDP workers are accustomed to the "Restricted Area" postings. In view of the above discussion, an exemption is needed to allow continued use of the "Restricted Area" designation and posting.

A wholesale change of postings (hundreds of postings) would be costly, particularly if the requirement was to complete the changes by 10/01/10; as discussed above, there would be no commensurate safety improvement.

ISSUES RELATED TO USE OF DOELAP BASED EXTERNAL DOSIMETRY PROGRAM

Under 10 CFR 835, a DOELAP accredited external dosimetry program is required. This DOELAP Accreditation Process includes utilizing a dosimeter from a DOELAP accredited process and an on-site program assessment and accreditation. The onsite assessment includes areas such as review of radiation hazards and external radiation monitoring needs, QA/QC program content and implementation, Dosimetry personnel training/credentials, records processing, results storage and other dosimetry program issues.

Implementing DOELAP would require:

- a new contract with a different supplier;
- passing an on-site assessment;
- developing/implementing vendor supplied software and interfaces; and
- developing a new REMS (DOE REMS) process.

However, USEC currently utilizes a NVLAP accredited external dosimetry service to provide dosimeters and processing services for the GDP activities at PORTS. The overall external dosimetry system is compliant with 10 CFR 20 and described in the SAR and implementing procedures. This program has been inspected by NRC to verify adequate safety and compliance with NRC requirements. Due to the low levels of routine exposures, this monitoring is performed principally to demonstrate programmatic exposure control effectiveness. Very low historical levels of exposure to external penetrating radiations at the PORTS site indicate that external monitoring would not be required to meet regulatory requirements except in very limited number of cases (well less than five percent of the GDP workforce).

The low cumulative exposures for the site make it unnecessary from a safety standpoint to change from NVLAP to DOELAP external dosimetry programs. Utilizing the NVLAP based external dosimetry system will meet all of the performance objectives of the DOE regulations with respect to controlling and monitoring exposure to external radiation hazards. The average annual external penetrating dose for 2009 for GDP operation and support activities of USEC at PORTS was less than 2.2 mrem. The highest of these doses for 2009 was less than 150 mrem. The activities tending to provide the highest individual doses, such as working with newly emptied cylinders and the associated work with Tc-removal traps as part of the DOE Feed Tc Removal Project, have been significantly reduced in frequency. Further, more than 95% of the monitoring performed for external exposures at PORTS is of a non-regulatory administrative nature as the personnel involved do not meet potential for exposure which would require dosimeters to be issued.

The types of operational and maintenance activities involving potential for exposure levels that would trigger regulatory based external dosimetry has been reduced even further with current shutdown activities such as the Tc-99 removal project being completed. The use of the NVLAP accredited external dosimetry would permit the same demonstration of programmatic exposure control effectiveness as would a DOELAP accredited system. Required collective and annual individual dose reporting systems and procedures exist.

In view of the above information, the expenditure of significant resources to convert from the existing GDP NVLAP accredited dosimetry system to a DOELAP accredited dosimetry system for monitoring of workers in FUEF activities would have no safety improvement and is not justified.

ISSUES RELATED TO USE OF DOELAP BASED INTERNAL DOSIMETRY PROGRAM

PORTS GDP has an approved, NRC 10 CFR 20 compliant, internal dosimetry program with technical basis and procedures in place for sample scheduling, submittal, handling, processing/analysis, results recording and reporting established to account for the specific isotopic mix and compounds encountered on-site. This system captures the unique aspects of the chemical and radiological properties of the radioisotopes present on-site. A more accurate evaluation of clearance times has been developed and documented based upon actual intake situations over many years of operation of the enrichment plant.

A DOE based internal dosimetry program would require utilization of different ICRP documents with various changes to internal dose calculations, including the following:

- Existing technical basis documents for internal dosimetry would need to be revised to account for differing values of Dose coefficients, as described in ICRP 68 and 72, and to establish or confirm evaluation (flag) levels using the new data (It should be noted that the NRC has not yet incorporated these new models into the NRC regulatory framework)
- Procedures – procedures would have to be modified to incorporate new dosimetry terminology
- Sampling Method – A justification for spot sampling methods and frequencies as well as derivation of acceptable values would have to be documented
- Implementation of new software that utilizes the new ICRP model parameters to permit evaluation of sampling data with revised model values would be required
- Modification of existing dosimetry program forms (record and non-record) generated using Excel and other available software to incorporate new formulas for dose determination
- Training of HP personnel on new methodology.

While the new ICRP dose modeling and control systems represent a number of major changes from the currently utilized ICRP 26 & 30 based systems, initial evaluation has determined that the actual impact to calculated internal dose from potential exposures in the FUEF facility operations would be minor. Any minor differences with a ICRP 68 & 72 based, DOE regulated internal dosimetry system are further put in perspective when a review of the assigned internal doses for GDP operations in 2009 (most recent year available as of this writing) shows results of a maximum to an individual of 12 mrem CEDE was assigned to an employee and the total assigned site collective CEDE shows results of 46 mrem. These results are from 5,110 samples from 1,136 sampled individuals. In view of the above, for anticipated FUEF operations, there is no safety benefit in transitioning to the newer ICRP dosimetry models.

Mr. William Murphie
July 19, 2010
GDP 10-0031, Page 7

In addition to the above issue, 10 CFR 835.402 (d) requires DOELAP accreditation for internal radiobioassay activities. Compliance with this requirement allows for three options:

- Get DOELAP accreditation for the PORTS Laboratory bioassay activities
- Outsource bioassay analysis to a DOELAP accredited vendor.
- Get an equivalency waiver issued by the Secretarial Officer of ES&H stating our process is sufficient. This would likely require an on-site assessment.

10 CFR 835.209 mandates that air sampling cannot be utilized for internal dose except as a last condition. The activities anticipated to be conducted in the FUEF covered under the BIO do not involve highly insoluble uranium materials at levels that would significantly add to any potential internal dose assignment.

Urinalysis is the primary form of analysis utilized by the PORTS GDP and would remain the most suitable bioassay method for the FUEF. Fecal analysis is also available onsite and can be utilized in unlikely event of exposure to certain isotopes for which urinalysis is not as effective. All of the aforementioned bioassay sampling and analyses are processed in the on-site laboratory which has performed these types of analyses for many years.

Currently the PORTS radiobioassay laboratory is not DOELAP accredited. However, the PORTS laboratory maintains current accreditations under the DOECAP, NELAC and AIHA laboratory certification programs. Portsmouth Laboratory Quality Assurance Program Plan, POEF-LMUS-01 is based on NQA-1 and incorporates the requirements of ISO 17025, DOE QSAS and the NELAC Policy Document. The quality assurance plan provides an overview of the laboratory quality assurance practices including but not limited to organization, document control, corrective actions, records management, equipment, quality assurance records and a listing of implementing procedures. These independent accreditations, Quality Assurance programs, and implementing procedures provide assurance that the quality of data generated is acceptable for use in dose monitoring and calculations.

Radiobioassay analyses are routinely performed on urine with the capability to analyze fecal material. The majority of radiobioassay samples are analyzed for Uranium-235 and Uranium-238. Transuranics, (Neptunium-237, Plutonium-238 and 239/240, and Americium-241), Thorium-228/230 and 232, and Technetium-99 are analyzed on a non-routine basis. Technologies used for analyses include, but are not limited to, Inductively Coupled Plasma Mass Spectrometry (ICPMS), Alpha Spectroscopy, and Liquid Scintillation. The laboratory utilizes preparation and analytical procedures which were created internally, using a documented validation process. ASTM C 1379-97 "Standard Test Method for Uranium-235 and Uranium-238 Isotopes by Inductively Coupled Plasma-Mass Spectrometry" originated from a procedure developed in the PORTS

Mr. William Murphie
July 19, 2010
GDP 10-0031, Page 8

laboratory. Other analyses, such as fluoride and metals, are also performed on urine samples. The current technology used for the above listed radionuclides meet the Minimum Testing Levels (MTLs) as listed in Table II of DOE-STD-1112-98.

Various quality control mechanisms are in place within the laboratory. Quality control is incorporated into each procedure through the use of blanks, laboratory control samples, spikes and tracers and evaluated against established acceptance criteria. The use of control charts is an integral part of the quality assurance program. A blind control program exists for the Uranium-235 and Uranium-238 by ICPMS. Training and qualification of laboratory personnel is accomplished through a procedurally defined and documented process, which includes an initial demonstration of capability and annual continuing demonstration of capability thereafter. The quality of analytical data is ensured by a multilayered review and approval process.

DOELAP implementation for internal dosimetry monitoring will require (as a minimum):

- Completing the application process (Application Submission: 2-3 weeks)
- Successful analyses of performance testing samples (Radiobioassay PT samples analyses: 3–6 months or longer dependant upon when the PORTS laboratory enters the cycle. The PT cycle normally starts early in the year.)
- Successful completion of the on-site assessment (Onsite assessment: 2–3 months from time it is scheduled to receiving the certification letter, assuming satisfactory performance.)
- Modify procedures as required.

Pacific Northwest National Laboratory provided a rough estimate of the time required to obtain DOELAP accreditation of 1 year from the beginning to the end of the process without any schedule delays.

Based on the above information, it is clear that the resource intensive transition from the existing NRC compliant internal dosimetry program to a DOE compliant (DOELAP) program would not result in any safety improvement.

CONCLUSION

In view of the strong legal, equitable, and policy grounds for granting this exemption request, the proven adequacy of the existing nuclear safety basis, programs and plans and associated regulatory framework established by the NRC Certificate and incorporated into the BIO and associated AB documents, the continued NRC regulation of significant portions of the PORTS GDP, and the highly unique circumstances attending the process of the de-lease of the major enrichment process buildings, the continuing shutdown surveillance and maintenance requirements, and the continued deactivation and hazard

Mr. William Murphie
July 19, 2010
GDP 10-0031, Page 9

reduction in preparation for D&D, USEC respectfully requests that DOE review and approve this exemption request as promptly as possible.

If you have any questions, please feel free to contact Steve Toelle at (301) 564-3250.

Sincerely,



Robert Van Namen

cc: R. DeVault, DOE-ORO
T. Hines, PPPO
J. Henson, NRC Region II
T. Liu, NRC HQ