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Dated at Rockville, Maryland, this 8th day of September 2008.

For the Nuclear Regulatory Commission.

**Brian E. Holian,**

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## NUCLEAR REGULATORY COMMISSION

[NRC-2008-0497]

### NRC Enforcement Policy Revision

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Notice of availability of draft and request for comments.

**SUMMARY:** The Nuclear Regulatory Commission (NRC) is revising its Enforcement Policy (Enforcement Policy or Policy) to more appropriately address the various areas that the NRC regulates, providing a framework that supports consistent implementation of the Enforcement Policy. A notice was published on January 25, 2007, announcing that the NRC was undertaking a major revision of the Enforcement Policy to clarify the use of terms and update the Policy, removing outdated information and adding information addressing enforcement issues in areas that are not currently directly addressed in the Policy. The NRC is now soliciting written comments from interested parties including public interest groups, states, members of the public and the regulated industry, i.e., reactor and materials licensees, vendors, and contractors, on the proposed revised Policy. This request is intended to assist the NRC in revising the Enforcement Policy; NRC does not intend to modify its emphasis on compliance with NRC requirements.

**DATES:** Submit comments on or before November 14, 2008. This time period allows for the public to respond to this

notice as well as the opportunity to provide general comments on the revision of the Policy. Comments received after this date will be considered if it is practical to do so, but the Commission is able to assure consideration only for comments received on or before this date.

**ADDRESSES:** Comments will be made available to the public in their entirety; personal information, such as your name, address, telephone number, e-mail address, etc. will not be removed from your submission. You may submit comments by any one of the following methods:

*Federal e-Rulemaking Portal:* <http://www.regulations.gov>; search on docket ID: NRC-2008-0497.

*Mail comments to:* Michael T. Lesar, Chief, Rulemaking, Directives, and Editing Branch, Office of Administration, Mail Stop: T-6D59, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

*Hand-deliver comments to:* 11555 Rockville Pike, Rockville, MD 20852, between the hours of 7:45 a.m. and 4:15 p.m., Federal workdays.

You can access publicly available documents related to this notice using the following methods:

*Federal e-Rulemaking Portal:*

Documents related to this notice, including public comments, are accessible at <http://www.regulations.gov>, by searching on docket ID: NRC-2008-0497.

*NRC's Public Document Room (PDR):* The public may examine and have copied for a fee, publicly available documents at the NRC's PDR, Public File Area O-1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland.

*NRC's Agencywide Document Access and Management System (ADAMS):* The draft Enforcement Policy is available electronically at the NRC's Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html> under ADAMS Accession Number ML082520457. From this site, the public can gain entry into ADAMS, which provides text and image files of the NRC's public documents. In addition, the draft Enforcement Policy will be available at <http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>. If you do not have Internet access or if there are problems in accessing the documents located in ADAMS, contact the PDR Reference staff at 1-800-397-4209, 301-415-4737 or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov).

**FOR FURTHER INFORMATION CONTACT:**

Doug Starkey, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555; [Doug.Starkey@nrc.gov](mailto:Doug.Starkey@nrc.gov), (301) 415-3456.

## SUPPLEMENTARY INFORMATION:

### I. Background

The NRC Enforcement Policy contains the enforcement policy and procedures that the U.S. Nuclear Regulatory Commission (NRC) uses to consider potential enforcement actions in response to apparent violations of NRC requirements. The primary purpose of the Enforcement Policy is to support the NRC's overall safety mission, i.e., to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment. Because it is a policy statement and not a regulation, the Commission may deviate from this statement of policy as appropriate under the circumstances of a particular case.

The Enforcement Policy was first published in the **Federal Register** on October 7, 1980 (46 FR 66754), as an interim policy. The Commission published a final version of the Policy on March 9, 1982 (47 FR 9987). The Enforcement Policy has been modified on a number of occasions to address changing requirements and additional experience and on June 30, 1995 (60 FR 34381), a major revision of the Policy was published. The NRC maintains the Enforcement Policy on its Web site at <http://www.nrc.gov>; select Public Meetings and Involvement, Enforcement, and then Enforcement Policy.

The goal of the Policy is to support the NRC's safety and security mission by emphasizing the importance of compliance with regulatory requirements, and encouraging prompt identification, and prompt, comprehensive correction of violations. Revisions to the Policy have consistently reflected this commitment: for example, in 1998, the NRC changed its inspection procedures to address the Reactor Oversight Process (ROP) initiative. This has been reflected in the Policy's use of risk insights to assess the significance of violations whenever possible. While this may result in fewer Notices of Violation being issued (because of a greater emphasis on the use of non-cited violations), it has not reduced the agency's emphasis on the importance of compliance with NRC requirements. Another example involves the NRC's development of a pilot program in 2005 which focuses on the use of Alternative Dispute Resolution (ADR) for certain kinds of enforcement cases. The NRC enforcement staff has used ADR to resolve reactor, fuel facility, and materials enforcement cases. While the use of ADR in enforcement raises unique issues, it emphasizes creative,

cooperative approaches to handling conflicts in lieu of adversarial procedures.

The NRC is again proceeding with making a major revision to its Enforcement Policy. As discussed above, since it was first published in 1980, sections of the Policy have been updated and additional sections have been included. Terms used under conventional enforcement are now associated with the significance determination process (SDP) performed under the ROP as well; therefore, the use of these terms must be clarified. In addition, there are areas that are not directly addressed in the Supplements of the Enforcement Policy, such as the enforcement issues associated with combined licenses for the proposed new reactors and the construction phase of proposed fuel facilities as well as recently promulgated requirements in the safeguards and security area. These areas must be addressed either by adding them to the text of the existing Policy and Supplements or by revising the Policy and developing new Supplements. Finally, the format of the Enforcement Policy is being reorganized to reflect the changes that have been made to it.

## II. Proposed Plan

The NRC envisions revising the Enforcement Policy so that the policy statement follows the actual enforcement process. The NRC's enforcement process has three basic steps: first, violations must be identified; next, the NRC must assess the significance or severity of the violation; and finally, the NRC must disposition the violation. Throughout the process, an organization or individual subject to an NRC enforcement action has multiple opportunities to provide input.

In order for the policy to follow the actual enforcement process some of the material in the current Enforcement Policy has been either removed entirely from the revised Policy or relocated to the NRC Enforcement Manual. The intent is that this revised Policy more closely reflects the Commission's statement of policy and that it not be a guidance document or procedure which discusses every specific implementation aspect of enforcement. Therefore, some of the information in the current policy, which more closely resembles procedural guidance rather than Commission policy, has been either reworded, deleted, or moved to a guidance document, *e.g.*, the NRC Enforcement Manual. One example of such a deletion is found in Section III, Responsibilities, of the current Policy.

Specifically, information regarding delegation of authority was removed because delegation of authority is actually addressed in internal NRC memorandums. Another example is found in Section V, Predecisional Enforcement Conferences (PECs), of the current policy. In particular, the implementation guidance in the current policy regarding conduct of PECs is being relocated to the Enforcement Manual. As a final example, most of the discussion regarding how the civil penalty assessment process is implemented will be relocated to the Enforcement Manual.

The revised Enforcement Policy also includes a proposed revision to a previous **Federal Register** notice, "Base Civil Penalties for Loss, Abandonment, or Improper Transfer or Disposal of Sources; Policy Statement," published December 18, 2000 (65 FR 79139).

The Commission is aware that enforcement actions deliver regulatory messages. Based on this tenet, the goals of this revision are to ensure that the Enforcement Policy: (1) Continues to reflect the Commission's focus on safety, *e.g.*, the need for licensees to identify and correct violations, to address root causes, and to be responsive to initial opportunities to identify and prevent violations; (2) appropriately addresses the various subject areas that the NRC regulates; and (3) provides a framework that supports consistent implementation, recognizing that each enforcement action is dependent on the specific circumstances of the case.

The following draft Table of Contents is consistent with the approach described above:

- PREFACE
- 1.0 INTRODUCTION
  - 1.1 Purpose of the Enforcement Policy
  - 1.2 Applicability of the Enforcement Policy
  - 1.3 Statutory Authority
  - 1.4 Regulatory Framework
  - 1.5 Adequate Protection Standard
- 2.0 NRC ENFORCEMENT PROCESS
  - 2.1 Identification of Violations
    - 2.2 Assessment of Violations
      - 2.2.1 Factors Affecting Assessment of Violations
      - 2.2.2 Severity Levels
      - 2.2.3 Significance Determination Process
        - 2.2.3.1 Exceptions to the Use of the SDP
    - 2.3 Disposition of Violations
      - 2.3.1 Minor Violations
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      - 2.3.4 Enforcement Guidance Memorandum
      - 2.3.5 Commission Notification and Consultation
  - 2.4 Participation in the Enforcement Process

- 2.4.1 Predecisional Enforcement Conference
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- 2.4.3 Alternative Dispute Resolution
- 3.0 USE OF ENFORCEMENT DISCRETION
  - 3.1 Violations Identified During Extended Shutdowns or Work Stoppages
  - 3.2 Violations Involving Old Design Issues
  - 3.3 Violations Identified Due to Previous Enforcement Actions
  - 3.4 Violations Involving Certain Discrimination Issues
  - 3.5 Violations Involving Special Circumstances
  - 3.6 Use of Discretion in Determining the Amount of a Civil Penalty
  - 3.7 Exercise of Discretion to Issue Orders
  - 3.8 Notices of Enforcement Discretion (NOED) for Reactor Licensees
  - 3.9 Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)
- 4.0 ENFORCEMENT ACTIONS AGAINST INDIVIDUALS
  - 4.1 Circumstances When Enforcement Action Against an Individual May Be Taken
  - 4.2 NOVs and Orders to Individuals
    - 4.2.1 Licensed Individuals
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- 5.0 PUBLIC AVAILABILITY OF INFORMATION REGARDING ENFORCEMENT ACTIONS
- 6.0 SUPPLEMENTS—VIOLATION EXAMPLES
  - 6.1 Reactor Operations
  - 6.2 Facility Construction
  - 6.3 Information Security
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  - 6.5 Transportation
  - 6.6 Materials Operations
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  - 6.8 Emergency Preparedness
  - 6.9 Fuel Cycle Operations
  - 6.10 Licensed Operator
  - 6.11 Reactor and Fuel Facility Security
  - 6.12 Discrimination
  - 6.13 Materials Security
- 7.0 GLOSSARY OF TERMS
- 8.0 TABLE OF BASE CIVIL PENALTIES

## III. Proposed Revisions to Table of Base Civil Penalties

### *Yucca Mountain High Level Waste Repository*

Congress enacted the Nuclear Waste Policy Act of 1987 (NWPAA) for the purpose of establishing a comprehensive national program for the safe, permanent disposal of high level waste (HLW). The NWPAA directed the Department of Energy (DOE) to study suitable sites for a deep, underground repository. In 1987, Congress amended the NWPAA and directed the DOE to study only one site, Yucca Mountain, as a potential repository.

The Atomic Energy Act of 1954, as amended (AEA), the Energy Reorganization Act of 1974, as amended (ERA), and NWPAA, as amended,

authorize the NRC to regulate the siting, development, construction, and operation of the Yucca Mountain repository.

The NRC's authority to regulate the DOE's receipt and possession of source, special nuclear, and byproduct material at Yucca Mountain has been implemented through 10 CFR Part 63, Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada.

The NRC's enforcement authority is set forth in the AEA and the ERA. This statutory authority is implemented through Subpart B of 10 CFR Part 2, which contains the procedures the NRC uses in exercising its enforcement authority, primarily Notices of Violation (NOVs), Civil Penalties, and Orders. Violations are subject to civil enforcement action and may also be subject to criminal prosecution.

Regulatory requirements have varying degrees of safety, security, or environmental significance. For that reason, the NRC imposes various base civil penalties depending on the specific circumstances. The base civil penalties for various reactor, fuel cycle, materials, and vendor programs are set forth in this revised Enforcement Policy, Section 8, Tables A and B.

The NRC uses a graded approach in assessing civil penalties based on the severity level of the violation and the class of licensee, vendor, or other person. Base civil penalties generally take into account the significance of a violation as the primary consideration, while the licensee's ability to pay is a secondary consideration. The NRC reviews each proposed civil penalty on its own merits and, after considering all relevant circumstances, may adjust the base civil penalties in Table A for Severity Level I, II, and III violations as reflected in Table B of the Enforcement Policy, *i.e.*, 100 percent for Severity Level I violations, 80% for Severity Level II violations, and 50 percent for Severity Level III violations. However, in no instance would a civil penalty for any one violation exceed the current statutory limit of \$130,000 per day per violation.

The most viable enforcement option available to the NRC, in addition to NOVs and orders, is the imposition of civil penalties. Currently there are no provisions in Table A of the Enforcement Policy that address DOE as a licensee. Therefore, the NRC is revising Table A of the Policy to ensure that, if the need arises, the NRC has the appropriate tools to take enforcement actions as prescribed in Subpart J, Violations, of 10 CFR Part 63, during the application phase. DOE submitted its

construction license application for Yucca Mountain for review on June 3, 2008. The NRC acknowledged receipt of the application on June 10, 2008, at which time DOE became an NRC license applicant.

Based on the potential nuclear material inventory involved, *i.e.*, at least 70 million metric tons of HLW, the corresponding safety consequences that could arise at the site, specifically to occupational employees, and the DOE's ability to pay, the staff recommends the statutorily allowed maximum base civil penalty of \$130,000 per day for a Severity Level I violation. In determining the base civil penalty that should be applied to the Yucca Mountain repository, the staff also considered the fact that when 10 CFR Part 63 was developed, the licensing criteria used in that part was comparable to the criteria applied to reactors and spent fuel facilities. The staff also recommends that this information be included in Table A under a generic heading, *i.e.*, "Yucca Mountain High Level Waste Repository," to address the possibility of any future engineered underground disposal facilities used for the storage of HLW.

Because the DOE's activities during the construction application would, most likely, lack direct safety consequences to the public health and safety (*i.e.*, waste will not have been transferred to the site during the first phase), it is likely that many of the violations during this phase could be either cited or non-cited Severity Level IV violations. In addition, the staff expects that escalated enforcement actions during the application review would seldom exceed a Severity Level III. While the staff has the option to mitigate or escalate a violation and/or monetary sanctions based on the circumstances surrounding a violation, the staff believes that few, if any, of these violations would escalate to a Severity Level I or II.

#### *Gas Centrifuge Uranium Enrichment Facilities*

The current Enforcement Policy does not provide a base civil penalty for enforcement actions at gas centrifuge uranium enrichment facilities. For that reason, if a violation of NRC requirements were to occur with a proposed civil penalty at this type of facility, the staff would assess the civil penalty utilizing the agency's philosophy as articulated in the Enforcement Policy, *i.e.*, the civil penalty would be based on the circumstances of the case, the type of

licensee involved, and the ability of the licensee to pay the civil penalty.

Currently, NRC staff is performing licensing reviews of two gas centrifuge uranium enrichment facilities with enrichment levels of 5 weight percent uranium-235 ( $U_{235}$ ) in one case and 10 weight percent  $U_{235}$  in the other. Therefore, it is appropriate to provide enforcement guidance for this type of facility at this time.

In developing a base civil penalty for gas centrifuge uranium enrichment facilities, NRC compared the radiological, chemical, and security hazards with both the Gaseous Diffusion Plants (GDPs) and Category III fuel fabricators and, through an overall comparison, provide an appropriate base civil penalty.

To determine the appropriate base civil penalty for gas centrifuge uranium enrichment facilities, the staff first compared the potential impact of noncompliance on public health and safety and the common defense and security with GDPs because both are enrichment facilities utilizing the same kinds of materials and, in addition, both have security implications associated with their operation. This comparison indicates that the radiological and chemical hazards at gas centrifuge uranium enrichment facilities are substantially less than these hazards at GDPs based on the significantly lower quantities of liquid and gaseous uranium hexafluoride ( $UF_6$ ) in the process systems and the significantly lower potential for releases of large quantities of  $UF_6$ .

Gaseous diffusion cascades operate at pressures that are sub-atmospheric to just above atmospheric pressure. In addition, the current GDP utilizes feed, product withdrawal, and tails withdrawal systems that handle large quantities of pressurized liquid  $UF_6$ . This results in the potential for releases of large quantities of  $UF_6$ . Since the GDP withdrawal stations involve the handling and lifting of up to 14-ton cylinders of liquid  $UF_6$ , there is a significant potential for severe consequences in the event that proper plant procedures are not followed. GDPs have high criticality hazards due to the large size (unsafe geometry) of cascade system piping and components, the large  $UF_6$  inventories processed, and the potential for accumulation of critical masses of  $UF_6$  within these system piping and components. GDPs also handle large amounts of flammable material such as lubricating oil and chemically hazardous material other than  $UF_6$  such as chlorine trifluoride ( $ClF_3$ ), fluorine ( $F_2$ ), and chlorine ( $Cl_2$ ).

The radiological and chemical hazards at gas centrifuge uranium enrichment facilities are, by comparison to the GDPs, substantially reduced. Individual centrifuges and cascades contain much smaller quantities of gaseous UF<sub>6</sub>. Although UF<sub>6</sub> is liquefied in the sampling and transfer systems, the cylinders containing liquid UF<sub>6</sub> are not moved. Centrifuge enrichment cascades operate at near-vacuum conditions, minimizing the potential for UF<sub>6</sub> releases. These plant designs substantially reduce the radiological and chemical hazards associated with releases of radioactive and hazardous chemicals in comparison to gaseous diffusion plants. Because of the small quantities of UF<sub>6</sub> in the cascades, a gas centrifuge uranium enrichment facility, limiting its enrichments to less than 20 percent of U<sub>235</sub> (special nuclear material of low strategic significance, therefore, a Category III fuel fabricator), will also have substantially reduced criticality hazards relative to a GDP.

The staff also considered the security implications associated with the operation of gas centrifuge uranium enrichment facilities as compared to the operation of GDPs and to Category III fuel fabricators. That comparison indicates that the security measures necessary to handle information at a gas centrifuge facility is more similar to the GDPs as both types of facilities handle classified information up to Secret Restricted Data and utilize classified components. Both types of facilities are also required to have comparable materials control and accounting programs and physical security programs, and both types of facilities are expected to have programs for protection against potential terrorist activities.

However, as the following comparison indicates, the overall radiological, criticality, and chemical security implications for gas centrifuge uranium enrichment facilities are more comparable to that of Category III fuel fabricators. First, both gas centrifuge uranium enrichment plants and Category III fuel fabricators have Category III Special Nuclear Material, that is, these facilities are limited to enrichments of less than 20 percent of U<sub>235</sub> (special nuclear material of low strategic significance). In addition, the radiological and chemical risks of gas centrifuge uranium enrichment facilities are more similar to, and in fact even lower than, Category III fuel fabricators due to the fact that fuel fabricators operate with the greater quantities of licensed material in process components and at higher pressures than gas centrifuge plants. Therefore,

the necessary physical protection requirements (based on the category of facility) for a gas centrifuge facility are similar to those required for Category III fuel fabricators.

The comparison of the security implications at gas centrifuge uranium enrichment and Category III fuel fabrication facilities indicates that:

1. Security of classified information and components: The security of classified information and components at gas centrifuge facilities will require higher levels of protection than Category III fuel fabricators because classified information and components are not used at Category III fuel fabricators. However, Category III fuel fabricators have and are required to yprotect Safeguards Information.

2. Prevention of unauthorized production or diversion of special nuclear material: The prevention of unauthorized production or diversion of special nuclear material would require gas centrifuge enrichment facilities to have materials accounting and control programs similar to those at the GDPs or Category I fuel fabrication facilities. Category III fuel fabricators also have materials accounting and control programs, although the implications of unauthorized production and diversion of special nuclear material would be less significant than a gas centrifuge uranium enrichment plant.

3. Protection of special nuclear material: Due to the possession of special nuclear material of low strategic significance at both types of facilities, gas centrifuge enrichment facility physical protection requirements for special nuclear material and protection requirements against terrorists are similar to Category III fuel fabricators.

4. Protection against potential terrorist activities: Due to the possession of special nuclear material of low strategic significance at both types of facilities, gas centrifuge enrichment facility physical protection requirements against terrorists are expected to be similar to Category III fuel fabricators.

In conclusion, the comparison of the radiological, criticality, and chemical risks of gas centrifuge uranium enrichment facilities to GDPs and Category III fuel fabricators indicates that these risks are lower than the same risks at GDPs and are lower than the risks at Category III fuel fabricators. In addition, two of the four security risk areas at gas centrifuge uranium enrichment facilities are more comparable to Category III fuel fabricators. Finally, the physical protection and terrorist security risks are substantially less significant for gas centrifuge uranium enrichment facilities

than at GDPs, when examined in the context of the radiological and chemical risks at gas centrifuge uranium enrichment facilities. Therefore, after considering both safety and security at gas centrifuge uranium enrichment facilities in terms of their nuclear material inventories and potential for consequences to the public and workers, the staff has concluded that gas centrifuge uranium enrichment facilities are more similar to Category III fuel fabricators than to GDPs. For that reason the staff believes that the base civil penalty for Severity Level I violations at gas centrifuge uranium enrichment facilities in Table A should be established at \$32,500, the amount already established for Category III fuel fabricators.

The Enforcement Policy is also being modified to clarify that the fuel fabricators in "c" of Table A refer to Category III fuel fabricators.

#### *Uranium Conversion Facilities*

The staff proposes to raise the base penalty for enforcement activities associated with uranium conversion facilities to a base civil penalty of \$32,500 from the current base civil penalty of \$13,000.

Currently, the only operating conversion plant in the United States is the Honeywell facility located in Metropolis, IL. Honeywell chemically processes the uranium source materials from triuranium octoxide (U<sub>3</sub>O<sub>8</sub>) to UF<sub>6</sub> prior to shipping the product to enrichment plants. The three main bulk chemicals used at Honeywell are ammonia (NH<sub>3</sub>, the source of hydrogen), anhydrous hydrofluoric acid (HF), and fluorine (F<sub>2</sub>). Each is a highly hazardous chemical. Release of bulk quantities of UF<sub>6</sub>, NH<sub>3</sub>, HF, or F<sub>2</sub> could have off-site consequences due the hazardous nature of the chemicals. NH<sub>3</sub>, HF, and F<sub>2</sub> are regulated under the Occupational Safety and Health Administration (OSHA) Process Safety Management Rule, 19 CFR 1910.119. The NRC only regulates those chemicals when they come in contact with licensed material, evolve from licensed material, as in HF from the UF<sub>6</sub>/water reaction, or adversely impact the safe handling of licensed material.

Uranium conversion facilities such as Honeywell are licensed under the requirements of 10 CFR Part 40, Domestic Licensing of Source Material. Uranium source material is shipped from uranium mills as "yellow cake" in plastic-lined drums. In addition to U<sub>3</sub>O<sub>8</sub>, yellowcake contains contaminants, including radioactive decay daughter products and various rare earth and other metals. The

yellowcake contains natural uranium, which has only 0.711 percent ( $U_{235}$ ). Hence, a criticality accident is not possible at a conversion facility. The greatest radiation exposure rates come from processes that concentrate the radioactive decay daughter products in waste streams. Soluble forms of uranium present the greatest health risk from source material at conversion facilities. The health risk is due to the toxic nature of uranium, which is similar to other heavy metals. The radioactive risk is small.

Specifically, the chemical and radiological hazards associated with uranium conversion facilities are as follows:

**Chemical Hazards—Uranium** is handled in many different chemical forms in  $UF_6$  conversion plants, but  $UF_6$  is the only chemical form of uranium that can be readily dispersed off-site.  $UF_6$  will react with water to form HF and uranium difluorodioxo ( $UO_2F_2$ ). Because airborne moisture is generally available, the reaction can be expected to occur if  $UF_6$  is released to the atmosphere. Both the HF and the  $UO_2F_2$  produced at a uranium conversion plant are hazardous chemicals. HF is a corrosive acid vapor that can severely harm the lungs and exposed portions of the body.  $UO_2F_2$ , formed as particulate material, produces radioactive and chemical effects when taken into the body, and its chemical effect is the most important because much of the uranium is present in soluble form.  $UF_6$  in the liquid form is the most hazardous.

The Honeywell facility produces  $UF_6$  by fluorination of  $UF_4$ . The  $UF_6$ , which is produced in a gaseous state, is collected in cold traps, where it is solidified by refrigerant cooling. Subsequent heating of the cold traps liquefies the  $UF_6$  for transfer to cylinders, where the  $UF_6$  cools to ambient temperature and again solidifies. The cold traps and the cylinders represent the largest accumulation of heated  $UF_6$  and therefore pose the greatest risk of a significant release of  $UF_6$ . The filled cylinders represent the greater risk because of their temporary use in the process, the large numbers of individual cylinders utilized, their typically larger inventories of  $UF_6$ , and their routine movement within the facilities before solidification. While the filled cylinders are considered to be the greater risk, these risks are also applicable to filled cold traps.

**Radiological Hazards—Chemical** conversion processes tend to concentrate uranium decay products in the waste streams. Alpha particles resulting from the primary

disintegration of uranium present no external radiation problem because they do not penetrate the skin. However, the uranium decay products include isotopes that emit mildly penetrating beta rays and highly penetrating gamma rays. Beta radiation levels as high as 200 mrad/hr may be found at the surface of  $UF_6$ . When  $UF_6$  is vaporized from a cylinder, the decay products usually remain behind. Thus, the internal surface of an empty cylinder may have beta radiation levels up to several rad/hr. Similarly, the gamma radiation from an empty cylinder will be much higher than from a filled cylinder and may range up to 200 mrad/hr.

The chemical characteristics of these contaminants will cause significant exposure levels of beta and gamma radiation from the uranium decay product activity in certain sections of the process. The risk of radiation exposure increases during maintenance of process equipment, transfer of product, and handling of  $UF_6$  cylinders.

In raising the base civil penalty for uranium conversion facilities, the staff has analyzed the associated radiological, chemical, and security hazards with that of Gaseous Diffusion Plants (GDPs), Category III fuel fabricators, and test reactors and industrial radiographers. Currently, uranium conversion facilities are in the same base civil penalty category as test reactors and industrial radiographers with the base penalty amount of \$13,000.

To determine the appropriate base civil penalty for uranium conversion facilities, the staff first compared the potential impact of noncompliance on public health and safety and the common defense and security with Gaseous Diffusion Plants (GDPs). Gaseous diffusion cascades operate at pressures that are sub-atmospheric to just above atmospheric pressure. In addition, the current GDP utilizes feed, product withdrawal, and tails withdrawal systems that handle large quantities of pressurized liquid  $UF_6$ . This results in the potential for releases of large quantities of  $UF_6$ . Since the GDP withdrawal stations involve the handling and lifting of up to 14-ton cylinders of liquid  $UF_6$ , there is a significant potential for severe consequences in the event that proper plant procedures are not followed. GDPs have high criticality hazards due to the large size (unsafe geometry) of cascade system piping and components, the large  $UF_6$  inventories processed, and the potential for accumulation of critical masses of  $UF_6$  within these system piping and components. GDPs also handle large amounts of flammable material such as lubricating oil and

chemically hazardous material other than  $UF_6$  such as  $ClF_3$ ,  $F_2$ , and  $Cl_2$ .

The radiological and chemical hazards at uranium conversion facilities are similar in comparison to the GDPs. At a uranium conversion facility such as Honeywell, all  $UF_6$  filled cylinders when initially filled must be allowed to cool for 5 days to ensure that all  $UF_6$  has solidified. The  $UF_6$  solidifies and volume drops from about 95 percent to about 60 percent full. Only "solid" cylinders are allowed to be shipped off-site.  $UF_6$  is in solid form under ambient temperature and pressure conditions. Any cylinder breach with  $UF_6$  in the solid form will have a limited release. Uranium conversion facilities are designed to process natural uranium, thus, there is no criticality concerns like there are at GDPs. However, the only major risk factor that a conversion facility does not have that is present at a GDP is the criticality risk.

The staff also considered the security implications associated with the operation of uranium conversion facilities as compared to the operation of GDPs and to Category III fuel fabricators. That comparison indicates that the security measures necessary at a uranium conversion facility are similar to that of a Category III fuel fabricators and GDPs. However, because of the large number of potential chemical hazards and certain radiological hazards, protection against potential terrorist activities is required to protect worker and public health and safety.

In comparison, the overall radiological and chemical hazards implications for uranium conversion facilities are much more significant than those of test reactors and industrial radiographer, but just somewhat less than that of GDPs. As delineated in the NRC Enforcement Policy, operations involving greater nuclear material inventories and greater potential consequences to the public and licensee employees receive higher civil penalties. For the reasons stated above the staff believes that the base civil penalty for violations at uranium conversion facilities in Table A should be established at \$32,500, the same amount established for Category III fuel fabricators.

#### **IV. Deletion of Interim Enforcement Policies**

The following interim enforcement policies located in the current Enforcement Policy have either been deleted from the revised Policy, for the reasons stated below, or relocated into the revised Enforcement Policy.

*Interim Enforcement Policy for Generally Licensed Devices Containing Byproduct Material (10 CFR 31.5)*

This interim policy addressed violations that persons licensed pursuant to 10 CFR 31.5 discovered and reported before, as well as during, the initial cycle of a notice and response program related to the revision of 10 CFR 31.5. This interim policy was expected to remain in effect through completion of one cycle of the licensee notice and response program. Since one cycle is complete, this interim policy is no longer in effect.

*Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fitness-for-Duty Issues (10 CFR Part 26)*

10 CFR Part 26, Fitness for Duty Programs, has been amended. The final rule became effective on April 30, 2008 (73 FR 16966). The amended rule addressed the issues covered by the interim enforcement discretion policy. Therefore, this interim policy has been deleted from the revised Enforcement Policy.

*Interim Enforcement Policy Regarding the Use of Alternative Dispute Resolution*

This interim policy addressed the use of a pilot program for testing the use of Alternative Dispute Resolution (ADR) in the enforcement program. On May 5, 2006, in SECY-06-0102, "Evaluation of the Pilot Program on the Use of Alternative Dispute Resolution in the Allegation and Enforcement Program", the staff provided the Commission with the results of the evaluation of the ADR pilot program. The Office of Enforcement concluded that the program was successful and the staff intends to continue using the ADR program for discrimination and other wrongdoing cases. The ADR program has been incorporated into the revised Enforcement Policy.

*Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)*

This interim policy was moved in its entirety into section 3.9 of the revised Enforcement Policy.

## V. Procedural Requirements

### *Paperwork Reduction Act*

This policy statement does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) Existing requirements were approved by the Office of Management and Budget (OMB), approval number 3150-0136.

### *Public Protection Notification*

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

### *Small Business Regulatory Enforcement Fairness Act*

In accordance with the Small Business Regulatory Enforcement Fairness Act of 1996, the NRC has determined that this action is not a "major" rule and has verified this determination with the Office of Information and Regulatory Affairs, Office of Management and Budget.

Dated at Rockville, MD, this 9th day of September 2008.

For the Nuclear Regulatory Commission.

**Cynthia A. Carpenter,**

*Director, Office of Enforcement.*

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## **NUCLEAR REGULATORY COMMISSION**

[IA-08-014]

### **In the Matter of Joseph S. Shepherd; Order Prohibiting Involvement in 10 CFR Part 71 Activities and Conditioning Other NRC Licensed Activities (Effective Immediately)**

#### I

Joseph S. Shepherd was a contractor to Source Production and Equipment Company, Inc. (SPEC), of St. Rose, Louisiana. SPEC was a registered user of a U.S. Nuclear Regulatory Commission (NRC or Commission) Model No. 5979 Shipping Package (Certificate of Compliance (CoC) No. 5979, Revision 10), and an NRC-approved Quality Assurance (QA) Program Approval holder (NRC Docket Number 71-0102) pursuant to Part 71 of Title 10 of the Code of Federal Regulations (10 CFR). The CoC authorized use of the Model No. 5979 package under the general license provisions of 10 CFR 71.12 [currently 10 CFR 71.17]. The QA Program Approval satisfied the requirements of 10 CFR 71.12(b) [currently 10 CFR 71.17(b)], and 10 CFR 71.101(c) [currently 10 CFR 71.101(c)(1)] by authorizing activities to be conducted under criteria of Subpart H of 10 CFR Part 71, "Quality Assurance." SPEC also was an NRC export licensee pursuant to 10 CFR Part 110. SPEC hired Mr. Shepherd to perform certain maintenance

inspections required by the NRC CoC for the Model No. 5979 shipping cask prior to making shipments of NRC licensed radioactive material to Mexico.

#### II

During an NRC inspection conducted on November 18, 2004, at Alpha-Omega Services, Inc. (AOS), an NRC certificate holder and Quality Assurance (QA) program holder, certain nonconformances regarding a shipping package, serial number 1B, CoC No. 5979, Model No. 5979, were brought to the NRC's attention. The end-caps of the shipping package did not conform to the physical (weight and materials) and dimensional (end cap thickness and length of the bolts) configuration specified by the CoC. In addition, holes had been drilled in the turret of the shipping package. Foss Therapy Services (FTS) had purchased the shipping package from AOS in 2001. FTS holds a State of California radioactive materials license and coordinates source exchanges and recycling for radiation therapy systems at various hospitals. FTS, however, is not an NRC licensee, authorized user, or certificate or QA program holder. AOS happened to be performing its annual inspection of the Model No. 5979 package when NRC conducted its November 18, 2004, inspection at AOS.

The NRC also became aware during its November 18, 2004, inspection at AOS that FTS had been using SPEC, to ship byproduct material for FTS to Mexico. The NRC obtained shipping documents which confirmed that SPEC had used the nonconforming container between June 25, 2001, and May 20, 2004, to make export shipments to Mexico. SPEC hired Mr. Shepherd, an officer and co-owner of FTS, to perform inspections of the Model No. 5979 shipping package prior to three export shipments by SPEC on July 15, 2003, December 4, 2003, and May 20, 2004.

As a result of the NRC's November 18, 2004, inspection, the NRC's Office of Investigations (OI) initiated an investigation to determine whether SPEC had willfully violated NRC regulations relating to its export shipments to Mexico.

Based on the OI investigation, the NRC has concluded that Mr. Shepherd engaged in three examples of deliberate misconduct in violation of 10 CFR 110.7b, "Deliberate Misconduct."

First, on or about July 15, 2003, and December 4, 2003, and in violation of 10 CFR 110.7b(a)(2), Mr. Shepherd deliberately provided materially inaccurate information to SPEC in two checklists and in shipping papers concerning inspections of the Model No.