

# POLICY ISSUE

## (Notation Vote)

August 24, 2007

SECY-07-0146

FOR: The Commissioners

FROM: Luis A. Reyes  
Executive Director for Operations */RA/*

SUBJECT: REGULATORY OPTIONS FOR LICENSING NEW URANIUM  
CONVERSION AND DEPLETED URANIUM DECONVERSION  
FACILITIES

PURPOSE:

To seek Commission approval of staff's recommended regulatory options for licensing new uranium conversion and depleted uranium deconversion facilities.

SUMMARY:

The U.S. Nuclear Regulatory Commission (NRC) staff is anticipating that commercial entities will submit license applications within the near-term for new uranium conversion and depleted uranium deconversion facilities. On March 22, 2007, the Commission issued a Staff Requirements Memorandum (SRM) stating that NRC would license future major fuel cycle facilities licensed under Part 40 (e.g., uranium conversion and depleted uranium deconversion facilities). The SRM also requested the staff to propose options for imposing 10 CFR Part 70, Subpart H, requirements for uranium conversion and depleted uranium deconversion facilities.

To be prepared to license these new facilities, NRC staff has identified three licensing issues that need to be considered. The first issue is what mechanism NRC should use to assert licensing jurisdiction over facilities that may be proposed in Agreement States. The second

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issue is whether NRC should establish by rulemaking, or by the issuance of orders, licensing requirements, equivalent to the performance requirements in Part 70, Subpart H, for new uranium conversion and depleted uranium deconversion facilities. The third issue is whether the performance requirements in Part 70, Subpart H, should be imposed on the existing Honeywell uranium conversion facility in Metropolis, Illinois, the International Isotopes, Inc., facility in Idaho Falls, Idaho, and other existing uranium conversion and deconversion facilities.

#### BACKGROUND:

Conversion/deconversion facilities are licensed under Part 40 because they possess and use source material. In addition, if sealed sources containing byproduct material are used (e.g., for instrument calibration or use in gauges), the facilities would also need to be licensed under 10 CFR Part 30.

In the licensing proceeding for the Louisiana Energy Services (LES) uranium enrichment project, LES indicated that its preferred option for the disposition of depleted uranium, generated in its enrichment operations, would be to use commercial deconversion and disposal firms. Depleted uranium deconversion is the chemical conversion of depleted uranium hexafluoride into a uranium oxide. Because of the chemical reactivity of uranium hexafluoride, it is necessary to chemically convert the material to an oxide form to produce a more stable chemical form for long-term storage or disposal. LES has a Memorandum of Understanding with Areva Enterprises, Inc. (AREVA), to license and construct a deconversion plant. At this time, neither LES nor Areva has formally announced plans for a deconversion facility.

Other entities have expressed interest in expanding uranium conversion capacity to meet future demand. Uranium conversion is the chemical conversion of yellowcake (a uranium oxide) from uranium mining and milling operations to uranium hexafluoride, which is the chemical form of uranium used in gaseous diffusion and gas centrifuge enrichment plants. These entities may also consider the technical advantages of combining both uranium conversion and depleted uranium deconversion activities at a single plant. Plants that combine conversion and deconversion operations would be able to recycle the fluorine from the chemical processes. At this time, no entity has formally announced plans for licensing a new uranium conversion facility.

The health and safety risks at uranium conversion and depleted uranium deconversion operations are primarily chemical risks from the use of hydrogen fluoride, which is a highly reactive and corrosive chemical that presents a substantial inhalation and skin absorption hazard to workers and the public. Because of the large quantities of hydrogen fluoride on-site, unit operations and material handling must be tightly controlled to minimize a hazardous work environment and danger to off-site residents.

#### DISCUSSION:

As previously mentioned, three issues need to be resolved to prepare for the licensing of new uranium conversion and depleted uranium deconversion facilities.

First Issue: Licensing Jurisdiction

Congress developed Section 274 of the Atomic Energy Act (AEA), so States can be given authority to regulate certain types of nuclear material and activities. These State Agreements can cover source material, limited quantities of special nuclear material, and byproduct material as defined in Section 11e. in the AEA. The State regulates the specific category of nuclear material covered in the State Agreement for the protection of the public health and safety from radiation hazards. The NRC maintains its authority in Agreement States to regulate areas excluded in Section 274c and continues its authority under Section 274m for common defense and security. Section 274j also explains when NRC can reassert its jurisdiction when States fail to protect public health and safety.

Historically, NRC has regulated conversion facilities in the United States. For example, NRC was the licensing authority over the Allied Chemical UF6 conversion plant (now known as the Honeywell plant in Metropolis, Illinois) when Illinois became an Agreement State in 1987. NRC declined the State's request to regulate the facility and maintained regulatory authority over the facility because of its potential significance to common defense and security. NRC based its decision on a U.S. Department of Energy (DOE) letter stating that conversion facilities were important to national security for providing uranium hexafluoride to the DOE enrichment complex, for military and energy purposes (Enclosure 1). NRC implemented this decision by issuing an Order to Allied stating NRC retained licensing authority over the conversion facility when it approved the Illinois State Agreement. NRC also provided notice in the *Federal Register*, public announcement and correspondence to the Illinois Governor and Congress, that NRC would continue regulating the Allied facility using Section 274m authority for common defense and security.

On March 22, 2007, the Commission provided an SRM stating that NRC would retain licensing jurisdiction over major fuel cycle facilities licensed under Part 40 (e.g., uranium conversion and deconversion facilities). On April 13, 2007, NRC staff informed the Agreement States of that decision (Enclosure 2). On April 27, 2007, DOE responded to NRC's February 22, 2007 letter, (Enclosure 3) stating that it supports NRC's policy decision to retain licensing jurisdiction of uranium conversion and depleted uranium deconversion facilities located in Agreement States (Enclosure 4). Although some of the basis for the DOE belief has changed from its earlier rationale, i.e., the availability of weapons grade uranium and nuclear fuel, the DOE statement regarding energy security emphasizes the importance of conversion facilities to the national interest in maintaining a secure supply of nuclear fuel to critical energy infrastructure facilities. This national interest could justify NRC retaining regulatory authority over conversion and deconversion facilities under Section 274m. NRC regulation of these facilities, as opposed to regulation by various Agreement States, would provide a centralized and consistent regulatory regime.

Post-9/11 there is a heightened threat of sabotage and terrorist attacks at nuclear facilities. The NRC issued advisories, letters and orders to increase security at nuclear facilities (including conversion facilities) to prevent sabotage and terrorist attacks. Conversion and

deconversion facilities not only handle radioactive source material, but large volumes of hazardous chemicals that are involved in processing the nuclear material and that justify imposing additional security requirements. The complex procedural operations at these facilities involving large volumes of hazardous chemicals and nuclear material also make it difficult to separate the additional common defense and security requirements from the program requirements designed to protect public health and safety. In these cases, the optimal way to regulate is through an integrated regulatory program.

The NRC would be the only regulatory agency, under the AEA, that could implement such a program. Consistent with the approach taken for Honeywell, NRC would apply its regulatory authority on a facility-wide basis to avoid dual regulation of the facility in an Agreement State. Therefore, regulatory authority over all applications of source, byproduct, and special nuclear material (e.g., use of sealed sources in gauges and for instrument calibration) at new conversion and deconversion facilities would be retained by NRC. Existing fuel cycle facilities that have Agreement State licenses for storage of depleted uranium and use of sealed sources in gauges would be unaffected because no adverse impacts have been identified in the existing programs.

NRC can regulate new conversion/deconversion facilities in Agreement States by asserting its authority under Section 274m. To assert Section 274m authority for common defense and security reasons, NRC does not need to modify the State Agreement to regulate new facilities. In addition to the April 13, 2007, letter to all the Agreement States, NRC will also formally notify individually affected Agreement States by letter if a letter of intent or a facility application is submitted. No additional actions are required.

Besides the Honeywell facility, there are three Part 40 facilities, located in Agreement States, that process uranium. These facilities deconvert uranium hexafluoride or uranium tetrafluoride into uranium metal. They are the Starmet facility in Concord, Massachusetts (formerly the Nuclear Metals site); the Starmet facility in Barnwell, South Carolina; and the Aerojet Ordnance facility in Jonesborough, Tennessee. The two Starmet facilities are currently undergoing decommissioning. The Aerojet Ordnance facility fabricates depleted uranium metal for U.S. Army anti-tank rounds from depleted uranium tetrafluoride using a magnesium-thermite reduction reaction and by recycling depleted uranium metal. The magnesium-thermite reduction reaction produces uranium metal and solid magnesium fluoride with only traces of hydrogen fluoride gas. These sites do not represent a significant public hazard because the Starmet facilities are no longer in operation and the Aerojet Ordnance facility does not produce significant quantities of hydrogen fluoride or fluorine as reaction products. Because of the low hazards at these Agreement State facilities, NRC staff is recommending that these facilities remain under Agreement State licensing jurisdiction. If similar facilities are proposed in Agreement States in the future, NRC would propose to apply the recommended threshold quantities, addressed under the Third Issue discussed below, in assessing whether those new facilities should be licensed under NRC rather than Agreement State jurisdiction. Staff would communicate this direction by letter to the Agreement States.

### Second Issue: Requiring an Integrated Safety Analysis

In September 2000, NRC promulgated regulations in Subpart H of Part 70, establishing performance requirements for applicants and licensees possessing greater than critical mass quantities of special nuclear material and engaged in: (1) enriched uranium processing; (2) fabrication of uranium fuel or fuel assemblies; (3) uranium enrichment; (4) enriched uranium hexafluoride conversion; (5) plutonium processing; (6) fabrication of mixed-oxide fuel or fuel assemblies; (7) scrap recovery of special nuclear material; or (8) any other activity that the Commission determines could significantly affect public health and safety. The performance requirements require applicants and licensees to prepare an integrated safety analysis that evaluates the safety hazards at the facility. The performance requirements also provide acceptable risk consequences for accidents based on the accident likelihood. These requirements provide a risk-informed, performance-based approach for evaluating hazardous conditions at facilities licensed under Part 70. Subpart H also contains requirements for establishing management measures to ensure that: (1) items relied on for safety are available and reliable when needed; (2) provides baseline design criteria for new facilities; and (3) adds additional reporting requirements.

In the SRM, dated March 22, 2007, the Commission directed the staff to propose options for requiring uranium conversion and depleted uranium deconversion facilities to complete an integrated safety analysis similar to the current Part 70, Subpart H, requirements for special nuclear material. The current regulations in Part 40 do not have specific, risk-informed requirements that address accident requirements analogous to those in Part 70, Subpart H. Because uranium conversion and depleted uranium deconversion facilities would be licensed under Part 40, an applicant would not be required to comply with the performance requirements in Part 70. However, because of the unique and significant hazards at these facilities, NRC staff considers that similar requirements are necessary for an integrated safety analysis and a structured, risk-informed approach for evaluating the consequences of facility accidents. Implementing this approach would establish a structured set of requirements, for conversion and deconversion facilities, that would be similar to the licensing requirements that other fuel fabrication, enriched uranium conversion, and enrichment facilities are already required to meet. It should be noted that the Honeywell uranium conversion facility has voluntarily prepared an integrated safety analysis, for its facility, as a means of defining accidents for its emergency plan.

To establish regulatory requirements similar to the Subpart H requirements in Part 70, the staff considered two options: impose the new requirements by rule or orders. A summary of the pros and cons of the options is enclosed (see Enclosure 5).

After consideration of the options, the staff recommends that the Commission conduct a rulemaking establishing in Part 40 the analogous requirements in Part 70, Subpart H, for new uranium conversion and deconversion facilities.

Third Issue: Impose Part 70, Subpart H, Licensing Requirements on Honeywell, International Isotopes, Inc., and Other Existing Uranium Conversion and Deconversion Facilities

As noted above, in its license renewal application that was approved on May 11, 2007, the Honeywell uranium conversion facility voluntarily prepared an integrated safety analysis to define accidents for its emergency plan. However, this action is not required for licensing, under Part 40. In its integrated safety analysis and license renewal application, Honeywell incorporated commitments similar to the requirements of Part 70, Subpart H, such as establishing management measures, establishing a configuration management system, following a facility change process, and annual reporting of facility changes and integrated safety analysis changes. Honeywell did not commit to additional event reporting requirements or baseline design criteria.

International Isotopes, Inc. is a uranium deconversion facility located in Idaho Falls, Idaho, and has a possession limit of 6000 kilograms of source material (uranium). The licensee utilizes a process that separates the fluorine from depleted uranium tetrafluoride (green salt) for the production of germanium fluoride (GeF<sub>4</sub>) and other compounds for use in the computer chip industry. Because of the limited operations and limited quantities of licensed material, the staff considers this facility to be a low risk facility from a health and safety perspective. This licensee made no commitments to prepare an integrated safety analysis.

As discussed under the first issue, the Starmet facilities and the Aerojet Ordnance facility are licensed by Agreement States and are low-risk facilities.

To impose Part 70, Subpart H, licensing requirements on Honeywell, International Isotopes, Inc., Starmet, and Aerojet Ordnance facilities, the staff considered four options: (1) impose the new requirements by order; (2) impose the new requirements by rule; (3) impose the new requirements by rule for new facilities and existing operating facilities with thresholds on source material possession limits and total quantities of hydrogen fluoride; and (4) continue the status quo. A summary of the pros and cons of the options is enclosed (see Enclosure 5).

After consideration of the options, the staff recommends that the Commission select Option 3 to conduct a rulemaking establishing in Part 40 the analogous requirements in Part 70, Subpart H, and to place a source material quantity threshold of 10,000 kg of uranium hexafluoride or uranium tetrafluoride and a quantity threshold of 1,000 pounds of hydrogen fluoride for imposition of the Part 70, Subpart H, requirements. Option 3 would impose the Part 70, Subpart H, requirements on new facilities as well as existing operating facilities that exceed the threshold quantities. It would not apply to decommissioning facilities.

RECOMMENDATIONS:

The staff recommends that the Commission:

1. Approve keeping the Starmet and Aerojet Ordnance facilities under Agreement State jurisdiction and, if similar new facilities are proposed in Agreement States in the future, NRC would retain jurisdiction of only those facilities that exceed the threshold quantity limits discussed below in Recommendation 2.
2. Approve conducting a rulemaking in accordance with the prioritization of the rulemaking action plan, to amend Part 40, to require new applicants and existing licensees for conversion and deconversion facilities with uranium hexafluoride or uranium tetrafluoride inventories greater than 10,000 kg (or alternative threshold quantity) and hydrogen fluoride inventories greater than 1,000 pounds (or alternate threshold quantity) to meet similar requirements, as required in Part 70, Subpart H. These requirements would not apply to existing facilities currently undergoing decommissioning. If new applicants submit license applications before the completion of the rulemaking, issue orders establishing the Part 70, Subpart H, performance requirements as part of the licensing basis for the application review.

RESOURCES:

The staff estimates that 2.0 FTEs and no technical assistance contract dollars over 2 years will be needed to promulgate regulations requiring uranium conversion or depleted uranium deconversion facilities to meet similar requirements, as in Part 70, Subpart H. The staff estimates that 0.25 FTE per order will be needed to impose the requirements by order.

If the Commission chooses to undertake the rulemakings, the new effort would be prioritized with respect to other rulemaking actions planned, and schedules would be developed, with key milestones, and transmitted to the Commission. At this time, 2.0 FTEs and no contract dollars have been budgeted for this rulemaking for fiscal years 2008 and 2009.

COORDINATION:

The Agreement State licensing jurisdiction issue was coordinated with the Agreement States by issuing the letter to Agreement States, dated April 13, 2007, in Enclosure 2. No comments from the Agreement States were received. In addition, the issue was discussed in the monthly Office of Federal and State Materials and Environmental Management Programs telephone conference calls with the Organization of Agreement States and Committee of Radiation Control Program Directors.

The Office of the General Counsel has reviewed this package and has no legal objection. The Office of the Chief Financial Officer has reviewed this Commission paper for resource implications and has no objection.

*/RA/*

Luis A. Reyes  
Executive Director  
for Operations

Enclosures:

1. DOE letter, to NRC, responding to request for input regarding regulation of the Allied conversion facility in Metropolis, Illinois.
2. NRC letter, to Agreement States, informing of Commission decision to retain jurisdiction over uranium conversion and deconversion facility licensing
3. NRC letter, to DOE requesting input on national security implications
4. DOE letter, to NRC, responding to request for input on national security implications on conversion and deconversion facilities
5. Options Summary of Pros and Cons



Department of Energy  
Washington, DC 20545

NOV 17 1986

Mr. Wayne Kerr  
Director  
Office of State Programs  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Mr. Kerr:

During our meeting on November 3, 1986, you advised that the Nuclear Regulatory Commission (NRC) is currently evaluating the matter of licensing and regulatory control by the State of Illinois over certain nuclear facilities located within that state. You specifically requested the Department of Energy's (DOE) views regarding the importance of the Allied Chemical Company uranium conversion facility located in Metropolis, Illinois, with respect to its support of national security interests.

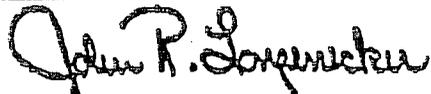
DOE currently operates gaseous diffusion plants to provide enriched uranium for both commercial and Government uses. These uranium enrichment facilities must be supplied with feed material that has been converted to uranium hexafluoride (UF<sub>6</sub>); the Allied Chemical facility in Illinois is one of two such facilities in the United States. As you know, the other conversion facility, operated by Kerr-McGee in Oklahoma has recently had a series of problems. Although the problems at Kerr-McGee have been corrected and NRC has given permission to renew operations, there remain some questions as to the commercial intent by Kerr-McGee to continue to operate that facility, posing the possibility that Allied Chemical might be the sole U.S. supplier for conversion services.

The above discussion serves to indicate that the combination of the commercially operated uranium conversion facilities and the DOE operated enrichment facilities represent a complex that is an important national asset essential to maintaining the common defenses and security of the United States. This includes both our military needs for enriched uranium and our energy security provided by those commercial utilities who depend on nuclear fuel to generate electricity.

In view of the above, it would appear prudent for NRC to retain its existing regulatory authority over uranium conversion facilities consistent with its charter to regulate facilities whose operation is in the national

interest. I hope this information is useful to you in your current considerations of working out appropriate transfers of responsibility to the State of Illinois as it becomes an agreement state.

Sincerely,



John R. Longenecker  
Deputy Assistant Secretary  
for Uranium Enrichment  
Office of Nuclear Energy

862-3



February 22, 2007

Mr. Edward G. McGinnis, Director  
for Corporate and Global Partnership Development  
Office of Nuclear Energy, NE-45  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585

SUBJECT: LICENSING OF NEW URANIUM CONVERSION AND DECONVERSION  
FACILITIES

Dear Mr. McGinnis:

The purpose of this letter is to request the U.S. Department of Energy's (DOE) current position on the national energy and security implications of the licensing and regulation of uranium conversion and depleted uranium deconversion facilities.

In 1986, the U.S. Nuclear Regulatory Commission (NRC) was evaluating whether licensing and regulatory authority over the Allied Chemical Company (now Honeywell) uranium conversion plant in Metropolis, Illinois, should be transferred to the State of Illinois. At that time, Illinois had requested Agreement State status under Section 274 of the Atomic Energy Act. DOE explained its position on this issue in a letter to NRC dated November 17, 1986, signed by Mr. John Longenecker, Deputy Assistant Secretary for Uranium Enrichment. The November 17, 1986, letter stated that the Allied Chemical facility was one of two conversion facilities in existence at the time that supplied converted uranium hexafluoride to uranium enrichment facilities operated by the DOE. The letter went on to state that the commercially operated uranium conversion facilities and the DOE operated enrichment facilities represented a complex that was an important national asset essential to maintaining the common defense and security of the United States. In view of these considerations, DOE concluded that it would be prudent for NRC to retain its existing regulatory authority over uranium conversion facilities consistent with its charter to regulate facilities whose operation is in the national interest.

NRC staff is currently evaluating the future licensing of new conversion and deconversion facilities that are anticipated in the near-term. One of the critical issues under consideration is whether the NRC should retain its licensing and regulatory authority over facilities located in Agreement States due to common defense and security concerns, as in the case of the Allied Chemical plant, or discontinue its licensing and regulatory authority pursuant to Section 274 of the Atomic Energy Act, which would result in these facilities being licensed and regulated by Agreement States.

Since 1986, there appears to have been several significant changes in the national uranium conversion and enrichment complex described in DOE's November 17, 1986, letter. For example, enrichment facilities no longer produce high enriched uranium for military purposes; gaseous diffusion plants, once operated by DOE, have been privatized; and the Portsmouth Gaseous Diffusion Plant, which produced high enriched uranium, has been closed. In addition, there has been significant changes in the dynamics of the national and international uranium market, the dynamics in international relationships (end of the cold war), and the heightened

E. McGinnis

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interest in the security area post September 11, 2001. Another consideration is, with the increase in the number of conversion facilities, whether the increased number of uranium conversion facilities would reduce the significance of any one facility from a common defense and security perspective.

Given these apparent changes, NRC staff is interested in whether DOE has additional information to offer to assist NRC in making its decision. In addition, NRC staff is interested in obtaining DOE's input with respect to the national energy and security implications of Agreement State licensing and regulation of depleted uranium deconversion facilities, which was not addressed in the November 17, 1986, letter.

We would appreciate any comments you have on this issue by March 23, 2007.

Sincerely,

/RA/

Robert C. Pierson, Director  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards



## Department of Energy

Washington, DC 20585

April 27, 2007

Mr. Robert C. Pierson  
Director  
Division of Fuel Cycle Safety  
and Safeguards  
United States Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dear Mr. Pierson:

This responds to your letter of February 27, 2007, requesting the position of the Department of Energy (DOE) on the national energy and security implications of the Nuclear Regulatory Commission (NRC) retaining the licensing and regulation of future uranium conversion and depleted uranium deconversion facilities in Agreement States. We understand that subsequent to this letter, the Commission decided that NRC will retain these responsibilities rather than discontinue such authority, which would have resulted in these facilities being regulated by Agreement States pursuant to section 274 of the Atomic Energy Act. DOE supports NRC's policy decision on this matter.

Currently 104 nuclear power plants are licensed in the United States and over 30 new plants that have begun the pre-license application process. DOE believes that U.S. energy security would be significantly enhanced by additional private sector investment in the domestic nuclear fuel supply infrastructure to support existing and anticipated nuclear power plants. However, potential investors have been reluctant to invest in projects that could face significant delays because of regulatory uncertainties. We believe that private financing for future uranium conversion and depleted uranium deconversion facilities would be further encouraged under the predictable regulatory regime provided by NRC.

I appreciate the opportunity to comment on issues relevant to our Nation's nuclear energy infrastructure. Should you have any questions, please contact me or Mr. William N. Szymanski, of my staff at 202-586-9086.

Sincerely,

A handwritten signature in black ink, appearing to read "Ed McGinnis". The signature is fluid and cursive.

Edward G. McGinnis, Director  
for Corporate and Global Partnership Development  
Office of Nuclear Energy



**Summary of Pros and Cons of  
Regulatory Options for Licensing New Uranium Conversion and  
Depleted Uranium Deconversion Facilities**

Second Issue: Requiring an Integrated Safety Analysis

1. Undertake a rulemaking establishing analogous requirements in Part 40.

Pros:

- Establishes a single, consistent, risk-informed set of requirements that would be applicable to all uranium conversion and depleted uranium deconversion facilities.
- Regulations would make voluntary commitments of Honeywell mandatory.
- Undertaking a rulemaking is consistent with NRC policy to minimize regulating on the basis of orders.
- Allows for public comment.

Cons:

- Requires an estimated 2.0 full-time-equivalents (FTEs) and no technical assistance contract dollars for all offices to complete the rulemaking over a 2-year period.
- Rulemaking would be applicable to less than five expected license applications in the near-term.
- Rulemaking may not be completed in time for the first applications for new conversion or deconversion facilities.

2. Issue orders imposing the Part 70, Subpart H, performance requirements.

Pros:

- Would require a smaller resource commitment (0.25 FTE per order) than rulemaking.
- Could be accomplished in substantially less time (less than six months) than the approximate two years to complete a rulemaking.

Enclosure 5

- Could be accomplished before the initiation of the technical review of new applications submitted in the near-term.

Cons:

- Would be applied on an applicant-by-applicant basis.
- Orders to new applicants would not apply to the existing uranium conversion and deconversion plants.
- Orders to existing uranium conversion and deconversion plants may be needed to ensure regulatory consistency.
- Inconsistent with NRC policy to minimize regulating on the basis of orders.
- No public comment period would be provided.

Third Issue: Impose Part 70, Subpart H, Licensing Requirements on Honeywell, International Isotopes, Inc., and Other Existing Uranium Conversion and Deconversion Facilities.

1. Issue orders imposing Part 70, Subpart H, requirements on Honeywell, International Isotopes, Inc., and other existing uranium conversion and deconversion facilities

Pros:

- Establish enforceable, risk-informed, performance-based requirements and management measures consistent with other fuel cycle facilities that are licensed under Part 70 and have related chemical and radiological hazards.
- Could be accomplished in a more timely manner before rulemaking.
- Could be accomplished with minimal staff resources (0.25 FTE), per order.

Cons:

- Would have financial impact on licensee.
- Due to voluntary preparation of the Honeywell integrated safety analysis, there would be little to no safety benefit of faster schedule compared to rulemaking.
- Issuing an order is inconsistent with NRC policy to minimize regulating on the basis of orders.
- Provide public comment.

2. Impose Part 70, Subpart H, requirements by rulemaking.

Pros:

- Establishes a single, consistent, risk-informed, performance-based set of requirements that would be applicable to all uranium conversion and depleted uranium deconversion facilities.
- Regulations would make full implementation of all the Part 70, Subpart H, requirements for Honeywell mandatory, not just the voluntary commitments to prepare an integrated safety analysis for emergency planning purposes.
- Undertaking a rulemaking is consistent with NRC policy to minimize regulating on the basis of orders.
- Allows public comment.

Cons:

- Requires an estimated 2.0 FTEs to complete the rulemaking over a 2-year period.
- Would have a financial impact on the licensee.
- Rulemaking would delay imposition of risk-informed requirements at the Honeywell facility.

3. Impose, by rulemaking, Part 70, Subpart H, requirements only for facilities having source material possession limits greater than 10,000 kg of uranium hexafluoride or uranium tetrafluoride and for facilities having possession of greater than 1,000 pounds of hydrogen fluoride (or an alternative threshold). This option would also impose, by rulemaking, Part 70, Subpart H, requirements only for new facilities and currently operating facilities.

Pros:

- Would reduce unnecessary regulatory burden on facilities with limited hazards, such as International Isotopes, Inc., Aerojet Ordnance, and the Starmet facilities.
- Because the total quantity of licensed material on site would be less than a single 14-ton cylinder of uranium hexafluoride, the public health and safety hazards would be less than at larger facilities who process greater quantities.

- The Occupational Safety and Health Administration (OSHA) and the U.S. Environmental Protection Agency (EPA) have established threshold quantities for hydrogen fluoride of 1,000 pounds as a basis for requiring occupational and release safety analyses. (See 29 CFR 1910.119 the OSHA Process Safety Management (PSM) regulation; 40 CFR Part 68, EPA's Risk Management Program requirements; and 40 CFR Part 355, Emergency Planning.) Based on these requirements, it is reasonable to establish a hydrogen fluoride possession threshold of 1,000 pounds for requiring imposition of the Part 70, Subpart H, requirements.
- Would eliminate the preparation of integrated safety analyses for existing low-risk facilities in decommissioning.
- Would reduce staff resource requirements for licensing and overseeing compliance with Part 70, Subpart H, programs.
- Would be a risk-informed application of regulatory requirements.
- Allows public comment.

Cons:

- For facilities under the thresholds or those in decommissioning, could be considered as an inconsistent application of Part 70, Subpart H, requirements (which currently apply to fuel cycle facilities with smaller inventories of UF<sub>6</sub> due to other hazards such as nuclear criticality).
4. Continue status quo without imposing the Part 70, Subpart H, requirements on Honeywell and International Isotopes, Inc.

Pros:

- Would reduce staff resource commitments by not imposing additional requirements for these facilities.
- Would reduce licensee resource commitments by not imposing new requirements on these facilities.

Cons:

- NRC could be perceived as not sufficiently regulating the potential safety hazards at the Honeywell, International Isotopes, Inc., and other existing uranium conversion and deconversion facilities.

- Honeywell, International Isotopes, Inc., and other existing uranium conversion and deconversion facilities would continue to operate under regulations that substantially differ from other fuel cycle facilities, including future conversion and deconversion facilities.
- Would not achieve Commission goal of risk-informing the licensing basis for these facilities.