

## Alternate Views of Some Staff on Options for an Independent Spent Fuel Storage Installation Security Rulemaking

### Purpose

This enclosure contains an alternate (differing) view by a member of the Office of Nuclear Security and Incident Response, Division of Physical and Cyber Security Policy, from those presented in this paper regarding potential options for an independent spent fuel storage installation (ISFSI) security rulemaking. I am presenting this alternate view in furtherance of the Commission's direction in Staff Requirements Memorandum (SRM)-SECY-19-0100<sup>1</sup> to provide "a notation vote paper with a full range of options for this rule."

### Summary

Following the Commission's direction in SRM-SECY-07-0148<sup>2</sup> to implement a dose-based approach for the ISFSI security rulemaking, the staff contracted with Sandia National Laboratories (SNL) to develop a "release fraction" methodology that could be applied to certain postulated hypothetical attacks against ISFSI storage casks that might breach a storage cask's confinement and shielding boundaries. This potential released fraction of a cask's contents (i.e., the released quantity of radioactive material) would be used in a standard dispersion model to calculate the resulting personnel exposures (doses) at varying distances from an ISFSI. I had lead responsibility at the U.S. Nuclear Regulatory Commission (NRC) for this effort and oversaw the contract with SNL.

In support of this options paper, independent staff subject matter experts undertook a further review of the technical viability of the completed SNL study in order to support the dose-based Option 3. These experts concluded that the SNL study had not produced a technically viable methodology to determine the released quantity of radioactive material to support the requisite dose calculations for certain postulated security events. I agree with the experts' conclusion on the lack of technical viable methodology. Moreover, based on my work on this effort, I only have low confidence that, even with the further expenditure of potentially significant additional time and resources, a technically viable release fraction model can be developed for licensee's and staff's use to calculate any potential dose consequences from certain postulated security events at an ISFSI.

Consequently, I view the absence of a technically viable release fraction methodology as a foundational barrier to establishing a regulatory process in which a licensee or the NRC staff determines that a specific-license ISFSI's physical security program can meet a 0.05 sievert (Sv) (5 rem) dose limit under either the proposed dose-based approach of Option 3 or the current requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 73.51.<sup>3</sup> Moreover, I view the staff's evaluation of the nonviability of this release fraction methodology as

---

<sup>1</sup> SRM on SECY-19-0100, "Discontinuation of Rulemaking-Independent Spent Fuel Storage Installation Security Requirements" (Agencywide Documents Access and Management System Accession No. [ML21217A045](#)), dated August 4, 2021.

<sup>2</sup> SRM-SECY-07-0148, "Independent Spent Fuel Storage Installation Security Requirements for Radiological Sabotage" ([ML073530119](#)), dated December 19, 2007.

<sup>3</sup> 10 CFR 73.51, "Requirements for the physical protection of stored spent nuclear fuel and high-level radioactive waste."

accomplishing the analysis proposed in SECY-10-0114<sup>4</sup> on a dose-based approach. Therefore, I view this conclusion as an impediment to a rulemaking that would use a dose-based approach, a rulemaking that uses a design basis threat (DBT) for radiological sabotage-based approach that includes a dose acceptance criterion, or the continuation of the current 0.05 Sv (5 rem) dose limit acceptance criterion language in 10 CFR 73.51.

Having reached this conclusion, I also equally believe that the current approach for the security of general-license ISFSIs under 10 CFR 72.212(b)(9) and 10 CFR 73.55 and the post-9/11 security orders is fully adequate.<sup>5 6</sup> These regulations require that the licensee protect a general-license ISFSI against the DBT of radiological sabotage, without specifying a dose acceptance criterion. This approach is also a viable and simpler regulatory solution for specific-license ISFSIs under 10 CFR 73.51.

Accordingly, I am presenting an alternate (differing) view that the Commission should consider and approve a new option (Option "X") for an ISFSI security rulemaking. This new option would consolidate staff's Option 2 and elements of Option 4, allow existing post-9/11 ISFSI security orders to be sunset, and recognize that the current 0.05 Sv (5 rem) dose-based acceptance criterion for security events under 10 CFR 73.51 is unworkable.

Specifically, I recommend this new option for rulemaking should include the following objectives:

- Codify and sunset, to the maximum extent practicable, the post-9/11 ISFSI security orders for both general-license and specific-license ISFSIs.
- Revise 10 CFR 73.51 to apply the DBT for radiological sabotage to licensees subject to this regulation, in a manner consistent with the performance-based language currently applicable to general-license ISFSIs subject to the DBT for radiological sabotage under 10 CFR 73.55.
- Remove the 0.05 Sv (5 rem) dose limit acceptance criterion for security-based events under 10 CFR 73.51 for the classes of licensees subject to this regulation.
- Make corrective and conforming changes arising from the application of the DBT for radiological sabotage to ensure consistency in 10 CFR 73.51, 10 CFR 72.180,<sup>7</sup> and 10 CFR 73.1.<sup>8</sup>
- Develop an updated draft ISFSI adversary characteristics guidance document that would be bounded by the adversary characteristics contained in Regulatory Guide (RG) 5.69.<sup>9</sup>

Under the Commission's Principles of Good Regulation, I view this new rulemaking option as providing benefits primarily in the attributes of openness, clarity, and reliability. I also view the codification of the current orders and application of the DBT for radiological sabotage under 10 CFR 73.51 licensees as having an improvement in effectiveness of security. The staff's current approach has treated licensees individually but have employed security orders that

---

<sup>4</sup> SECY-10-114, "Recommendation to Extend the Proposed Rulemaking on Security Requirements for Facilities Storing Spent Nuclear Fuel and High-Level Radioactive Waste" ([ML101960614](#)), dated August 26, 2010.

<sup>5</sup> 10 CFR 72.212, "Conditions of general license issued under paragraph 72.210."

<sup>6</sup> 10 CFR 73.55, "Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage."

<sup>7</sup> 10 CFR 72.180, "Physical protection plan."

<sup>8</sup> 10 CFR 73.1, "Purpose and scope."

<sup>9</sup> RG 5.69, "Guidance for the Application of Radiological Sabotage Design-Basis Threat in the Design, Development and Implementation of a Physical Security Program that Meets 10 CFR 73.55 Requirements (U)" (non-public).

included “interim security measures (ISMs)” (issued after 2002) and “additional security measures (ASMs)” (issued after 2007). These ISMs and ASMs are effectively identical and were issued as new licensees applied for or initiated an ISFSI. Consequently, I do not view this approach meeting the typical process of considering unique factors for the site and facility; that is, a case-by-case evaluation of the post-9/11 security needs for the ISFSI. Rather, I am concerned that this necessary approach of implementing identical security orders – that could remain in place for multiple decades or even up to a century – is short-circuiting the Commission’s typical rulemaking process with its notice and opportunity for public comment. Moreover, the requirements of 10 CFR 73.51 would also apply to a monitored retrievable storage installation (MRS) or a geologic repository operations area (GROA) that the U.S. Department of Energy (DOE) would operate as a licensee of the NRC. Resolving these issues now will permit DOE to effectively plan for the security requirements for future applications of such NRC licenses. Accordingly, I view the use of the agency’s rulemaking process to accomplish the above objectives as providing the greatest openness and transparency to the public, licensees and other stakeholders; clarity by removing unworkable provisions; and reliability by treating identical facilities consistently.

Finally, I view staff’s cost and benefit evaluations in previous papers and the analysis in this paper as tending to skew towards the immediate security and implementation costs and benefits while providing insufficient consideration to the Commission of other longer-term qualitative costs and benefits. While staff’s assessments are reasonable, I am concerned that other costs and benefits were not fully incorporated into the staff’s considerations. These additional costs and benefits would arise from increased openness and transparency and increased opportunity for public comment. I believe such qualitative costs and benefits of conducting rulemaking versus remaining under the post-9/11 security orders under the no-action alternative (Option 1) should be considered for the potential extended duration for the current post-9/11 security orders. I also view the national experience of the last 20 to 30+ years, in attempting to create a workable geologic repository facility and to begin transferring spent nuclear fuel (SNF) as meaning that the current SNF could potentially remain under the existing ISFSI security structure for another 50 to 100+ years. Consequently, I would recommend that the Commission evaluate the options discussed in this paper and this enclosure in the light of such broader policy and cost and benefit considerations.

### **Additional Background Information**

As discussed in this paper, the current regulations in 10 CFR 72.212(b)(9) requiring general licensees to “[p]rotect the spent fuel against the design basis threat of radiological sabotage in accordance with...§ 73.55...” have been in place since July 1990, when the general-license ISFSI provisions were added to 10 CFR Part 72.<sup>10</sup> The current regulations in 10 CFR Part 72 and Part 73<sup>11</sup> do not explicitly require the remaining ISFSI licensees (co-located or non-co-located specific-license ISFSIs) to protect their ISFSIs against the DBT for radiological sabotage. Additionally, the scope of the DBT for radiological sabotage regulation in 10 CFR 73.1 does not specifically exclude specific-license ISFSIs. Specific-license ISFSIs do not have any requirements in 10 CFR 72.180, analogous to the language in 10 CFR 72.212(b)(9) requiring general-license ISFSIs to protect the stored SNF against the DBT for radiological sabotage. Furthermore, the previous regulations in 10 CFR 73.1(a) only exempted specific-license ISFSIs from certain elements of the DBT for radiological sabotage,

---

<sup>10</sup> 10 CFR Part 72, “Licensing Requirements for The Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste.”

<sup>11</sup> 10 CFR Part 73, “Physical Protection of Plants and Materials.”

implying that specific-license ISFSIs were subject to some portion of the DBT for radiological sabotage.

However, in the Commission's 2007 DBT rule,<sup>12</sup> which was focused on security requirements for power reactors and Category I strategic special nuclear material licensees, the final rule changed the scope of 10 CFR 73.1(a) to not apply the DBT for radiological sabotage to specific-license ISFSIs. The final DBT rule was provided to the Commission in SECY 06-0219 and was approved in SRM-M070129.<sup>13 14</sup> In the final rule's response to Comment Issue No. 5, the Commission indicated that resolution of: (1) the differing security requirements between general-license ISFSIs and specific-license ISFSIs, and (2) the applicability of the DBT for radiological sabotage to specific-license ISFSIs, would be considered in a future ISFSI security rulemaking. The Commission's most recent comprehensive updates of the ISFSI security regulations occurred in 1994 and 1998 rulemakings (i.e., the land vehicle bomb rulemaking and the physical protection of SNF rulemaking, respectively).<sup>15 16</sup>

Despite the different treatment in the regulations of general-licensed ISFSIs and specific-licensed ISFSIs, the October 2002, ISFSI security orders issued in response to the terrorist attacks of September 11, 2001, brought all ISFSIs to the same level of protection. These orders were only issued to ISFSIs in existence at that time. Subsequently, the staff issued new ISFSI licensee's security orders that were consistent with the October 2002, ISFSI security orders. Consequently, all current ISFSIs have been brought to the same level of protection. Therefore, the staff viewed the promulgation of clarifying regulations as appropriate within the normal rulemaking process.

## **Discussion**

In SECY-07-0148, Enclosure 3,<sup>17</sup> the staff provided a detailed assessment of whether the scope of the DBT for radiological sabotage should be expanded from its current applicability to only general-license ISFSIs to apply to both general-license and specific-license ISFSIs. The staff concluded that the option involving consistently applying the DBT for radiological sabotage to both general-license and specific-license ISFSIs (i.e., the DBT-based approach), along with developing an ISFSI-specific adversary characteristics document, and the dose-based approach option were both "technically acceptable, and either option would result in an appropriate level of security for ISFSIs." The staff viewed "the development of consistent security requirements

---

<sup>12</sup> Final Rule - 10 CFR Part 73, "Design Basis Threat." Published in the *Federal Register* (72 FR 12705) on March 19, 2007. See Public Comment Issue No. 5 regarding ISFSIs and the DBT for radiological sabotage at 72 FR 12716.

<sup>13</sup> SECY-06-0219, "Final Rulemaking to Revise 10 CFR 73.1, Design Basis Threat (DBT) Requirements" ([ML062130289](#)), dated October 30, 2006.

<sup>14</sup> SRM-M070129, "Affirmation Session: SECY-06-0219, 'Final Rulemaking to Revise 10 CFR 73.1, Design Basis Threat (DBT) Requirements' ([ML070290286](#)), dated January 29, 2007.

<sup>15</sup> Final rule - 10 CFR Part 73, "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants." Published in the *Federal Register* (59 FR 38889) on August 1, 1994.

<sup>16</sup> Final rule - 10 CFR Parts 60, 72, 73, 74 and 75, "Physical Protection for Spent Nuclear Fuel and High-Level Radioactive Waste." Published in the *Federal Register* (63 FR 26955) on May 15, 1998.

<sup>17</sup> SECY-07-0148, "Independent Spent Fuel Storage Installation Security Requirements for Radiological Sabotage," Enclosure 3, "Should the Design-Basis Threat for Radiological Sabotage Be Applied Consistently to All Independent Spent Fuel Storage Installations (Not Just to General Licensees)? (Policy Issue 3)" (ML062860207, non-public; [ML080280028](#), redacted), dated August 28, 2007.

for all ISFSI licensees as a fundamental policy objective that is necessary for long-term regulatory stability and for maintaining public confidence in the NRC's regulatory program.”

In Enclosure 3, the staff recommended that it develop new, risk-informed, performance-based security requirements (i.e., the dose-based approach) to increasing security at ISFSIs. Under the dose-based approach, licensees would use the release fraction values and the radionuclide inventory from their as-loaded cask configurations to calculate a quantity of radioactive material that could be released in a malevolent attack by an adversary. An ISFSI licensee would then use the quantity of radioactive material released (i.e., the release fraction times the nuclide inventory) in a gaussian plume dispersion model to calculate the potential dose consequences at a distance from the ISFSI, subsequently adjusting its security profile, as required.

The staff recommended the dose-based approach because “it does not require developing multiple adversary characteristics documents supporting the singular DBT for radiological sabotage.” Many of the facts set forth by staff in this detailed assessment have not changed in the approximately 15 years since SECY-07-0148 was provided to the Commission. However, several important facts have changed substantially during this time period that challenge the staff’s recommendation under Enclosure 3. The staff subsequently provided to the Commission feedback from public and closed meetings in May 2011, involving both licensees and members of the public (cleared non-governmental organization (NGO) personnel) that were opposed to the use of the dose-based approach (albeit for different reasons), and instead supported the use of a DBT-based approach in an ISFSI security rulemaking.

#### *Adversary Characteristics Guidance Document*

In support of determining release fraction values, the Commission in SRM-SECY-07-0148 also directed the staff to develop a draft adversary characteristics document for ISFSIs. This was accomplished under Draft Guide (DG)-5033. In developing DG-5033 staff also recognized that there are differences in the tactics, techniques, and procedures that would be employed in an attack on a power reactor’s vital structures, systems and components versus an attack on an ISFSI storage cask or system. The adversary characteristics in DG-5033 were controlled as Safeguards Information and were bounded by the adversary characteristics for radiological sabotage against power reactors contained in RG 5.69. In March 2011, the staff issued DG-5033 for limited comment to cleared individuals (licensees and NGO personnel with a need to know). The ensuing comments on DG-5033 did not validate the staff’s concern in Enclosure 3 to SECY-07-0148 regarding challenges posed by “multiple adversary characteristics documents supporting the singular DBT for radiological sabotage.”

Finally, on May 29, 2020, the staff published a *Federal Register* notice (85 FR 32393) discontinuing DG-5033. The staff’s action was informed by the Commission’s direction in a non-public SRM-COMKLS-18-0003<sup>18</sup> to reduce the scope of the ISFSI security rulemaking and only codify the requirements of the security orders issued by the NRC following the terrorist attacks of September 11, 2001. As a result, the ISFSI security rule would no longer address security scenarios against which licensees would perform dose calculations, which DG-5033 was intended to support. Therefore, the staff determined that the development of DG-5033 was no longer warranted and was discontinued.

---

<sup>18</sup> SRM-COMKLS-18-0003, “Fiscal Year 2020 Budget to the Commission,” dated August 22, 2018 (non-public),

However, ISFSI adversary characteristics are also necessary under a DBT-based approach to rulemaking. I believe the staff's previous efforts on DG-5033 can be readily reconstituted to develop an updated ISFSI adversary characteristics regulatory guidance document supporting the new option to rulemaking. This updated adversary characteristics guidance for ISFSI should remain bounded by RG 5.69, Revision 1, following the recent update of RG 5.69 by the Commission;<sup>19</sup> and should be provided to the Commission for its review in parallel with a proposed rule, before obtaining limited comment from cleared stakeholders.

### *Protective Strategy and the DBT*

A consideration associated with this new option is the meaning of the phrases “protecting spent fuel against the DBT for radiological sabotage,” and “applying the DBT for radiological sabotage.” For power reactors, protecting a reactor facility against the DBT for radiological sabotage requires a licensee under 10 CFR 73.55(b)(3)(I) to “...detect, assess, interdict, and neutralize threats up to and including the design basis threat of radiological sabotage...” The licensee uses armed security personnel and engineered security barriers to prevent adversaries from reaching critical target-set equipment. This is commonly referred to as a “denial” or “denial of task” protective strategy.

However, under 10 CFR 72.212(b)(9)(v), a general-license ISFSI—which is required to be located at a Part 50-licensed facility—is currently exempted from the requirement to interdict and neutralize threats required by 10 CFR 73.55. Additionally, non-co-located, specific-license ISFSIs are currently required by 10 CFR 73.51(b)(3) to establish and maintain a physical protection system that “must be designed to protect against loss of control of the facility that could be sufficient to cause a radiation exposure exceeding the dose [limit] as described in 10 CFR 72.106” (i.e., a 0.05 Sv (5-rem) dose).<sup>20</sup> Therefore, with respect to ISFSIs, in Enclosure 3 to SECY-07-0148, the staff proposed to interpret “protecting spent fuel against the DBT for radiological sabotage” to mean that for an ISFSI licensee a particular dose limit should not be exceeded if an act of radiological sabotage were to occur.

The staff indicated this would mean that an ISFSI licensee's physical security system would be required to provide reasonable assurance that a terrorist attack on an ISFSI would not result in a radiological release with the potential to cause a dose exceeding the 0.05-Sv (5-rem) dose criterion to a maximally exposed individual located at the ISFSI's controlled area boundary. Because a general-license ISFSI is exempted from the requirement under 10 CFR 73.55 to interdict and neutralize threats from an adversary force, the protective strategy for this type of ISFSI is commonly referred to as “detect, assess, and communicate” with local law enforcement (LLEA). In the event of an attack against an ISFSI, and following the licensee's communication to the applicable LLEA, the licensee's obligations under 10 CFR Part 73 are satisfied. LLEA personnel are then expected to respond to the threat against the ISFSI and to neutralize it. This protective strategy for an ISFSI takes credit for the massive size of the SNF storage casks and their inherent robustness and applies for situations in which an operating power reactor is present, is undergoing decommissioning, or is completely decommissioned. Once all the SNF is removed from the reactor to the ISFSI, the licensee's security program and number of armed security personnel are reduced to the numbers specified in the post-9/11 ISFSI security orders. Under our new rulemaking option, I would recommend applying the same “detect, assess, and

---

<sup>19</sup> SRM-SECY-18-0110, “Proposed Revision to Regulatory Guide 5.69, ‘Guidance for the Application of the Radiological Sabotage Design-Basis Threat for Nuclear Power Reactors,’” dated November 18, 2021, (non-public).

<sup>20</sup> 10 CFR 72.106, “Controlled area of an ISFSI or MRS.”

communicate” protective strategy to both a general-license ISFSI and a specific-license ISFSI that are both subject to the DBT for radiological sabotage.

#### *Force-on-Force Exercises*

Currently, the staff does not conduct force-on-force (FOF) security exercises against ISFSIs. In SECY-07-0148, the staff evaluated whether this practice should continue. The staff’s view was that there would be minimal benefit from performing FOF exercises at ISFSI licensees, all of whom currently implement a “detect, assess, and communicate” protective strategy (as opposed to a “denial of task” protective strategy). This is because an FOF exercise is designed to assess the adequacy of a licensee’s response to an adversary attack. An ISFSI licensee’s successful response under this current protective strategy is only to detect and assess the threat and then communicate with LLEA to request assistance, rather than to respond to the attack by interdicting and neutralizing the threat. Staff expects that such licensee communication to LLEA could occur in less than a minute following an adversary penetrating the ISFSI’s protected area’s intrusion detection system—if the adversary is not detected until then. Neutralization of the adversaries is thus a responsibility of LLEA, not the ISFSI licensee. Consequently, the staff’s view is that there would be costs to licensees and the NRC, but only minimal benefit to be gained from conducting FOF exercises at ISFSIs implementing a “detect, assess, and communicate” protective strategy.

Section 170D.a of the Atomic Energy Act of 1954, as amended (AEA),<sup>21</sup> mandates that “...the Commission shall conduct security evaluations at each licensed facility that is part of a class of licensed facilities, as the Commission **considers** to be appropriate, to assess the ability of a private security force of a licensed facility to defend against any applicable design basis threat...” (emphasis added). Additionally, section 170D.b of the AEA mandates that “[t]he security evaluations shall include force-on-force exercises.” The staff’s view is that section 170D.a provides the Commission with the necessary flexibility to determine whether FOF exercises are appropriate for a general-license or specific-license ISFSI that is required to defend against the DBT for radiological sabotage—all of whom would implement a “detect, assess, and communicate” protective strategy (as opposed to a “denial of task” protective strategy).

Accordingly, I agree with the staff’s view in SECY-07-0148 that there would be minimal benefit to be gained by licensees or the NRC in performing FOF exercises at any ISFSI licensee subject to the DBT for radiological sabotage and implementing a “detect, assess, and communicate” protective strategy.

#### *Use of a 0.05 Sv (5 rem) Dose Criterion in ISFSI Security Requirements*

The current regulations in 10 CFR 72.212(b)(9) and 10 CFR 73.55 do not establish a dose performance criterion for a general-license ISFSI in protecting against the DBT for radiological sabotage. Consequently, I recommend that a rulemaking which establishes a requirement in 10 CFR 73.51 to protect the SNF against the DBT for radiological sabotage should use a similar structure and for security events at specific-license ISFSIs; and therefore, eliminate the 0.05-Sv (5-rem) dose limit criterion for licensees subject to 10 CFR 73.51. Additionally, I agree with the conclusions of the subject matter experts discussed in this paper that the release fraction study completed by SNL does not provide a technically viable methodology to accomplish the

---

<sup>21</sup> Section 170D of AEA, “Security Evaluations” (42 U.S.C. § 2210d).

dose-based approach rulemaking objective envisioned under Enclosure 3 of SECY-07-0148 and Option 3 of this paper.

Consequently, I view the absence of a technically viable release fraction methodology as a foundational barrier to establishing a regulatory process in which a licensee or the NRC staff determines that a specific-license ISFSI's physical security program can meet the 0.05 Sv (5 rem) dose limit of 10 CFR 73.51. Moreover, I view the staff's evaluation of the nonviability of this release fraction methodology as accomplishing the analysis on a dose-based approach that was proposed by staff in SECY-10-0114; and therefore, the staff conclusion on nonviability serves as an impediment to any rulemaking that would use a dose-based approach for ISFSI security requirements, use a DBT for radiological sabotage-based approach that includes a dose acceptance criterion, or continues the current 0.05 Sv (5 rem) dose limit acceptance criterion language in 10 CFR 73.51. Finally, based upon my extensive work in developing this SNL study, I only have low confidence that the NRC's expenditure of further substantial time and resources (for example under Option 4) could eventually create a technically viable release-fraction methodology to accomplish a dose-informed rulemaking objective.

### *Cost and Benefit Considerations*

In my view the staff's previous cost and benefit evaluations in SECY-07-0148, SECY-10-0114, SECY-19-0100, and the analysis in this paper tend to be skewed towards the prompt (immediate) security and implementation costs and benefits. I am concerned that while these analyses provide useful information to the Commission for the immediate costs and benefits for contemplated rulemaking options, there is insufficient consideration of other longer-term qualitative costs and benefits. These additional costs and benefits would arise from increased openness and transparency and increased opportunity for public comment. I believe such qualitative costs and benefits of conducting rulemaking versus remaining under the post-9/11 security orders under the no-action alternative (Option 1) should be considered for the potential extended duration for the current post-9/11 security orders. In my view the national experience of the last 20 to 30+ years, in attempting to create a workable geologic repository facility and to begin transferring SNF as meaning that the current SNF could potentially remain under the existing ISFSI security structure for another 50 to 100+ years—either at current ISFSIs or in centralized storage facilities. Consequently, I would recommend that the Commission evaluate the options discussed in this paper and this enclosure in the light of such broader cost and benefit considerations.

### **Conclusions**

I am concerned that under staff's Option 1, the current ISFSI post-9/11 security orders could remain in place for an extended period absent centralized storage facilities or completing the licensing and construction of a geologic repository and the subsequent SNF shipping campaigns to transfer the SNF from the current ISFSIs. Under the Commission's Principles of Good Regulation, I view this new rulemaking Option "X" as providing benefits primarily in the attributes of openness, clarity, and reliability. I view the codification of the current orders and application of the DBT for radiological sabotage under 10 CFR 73.51 licensees and any necessary harmonization of requirements as having an improvement in effectiveness of security.

The staff's current approach has treated licensees individually but have employed consistent security orders that included ISMs (issued after 2002) and ASMs (issued after 2007). These ISMs and ASMs are effectively identical and were issued as new licensees applied for or

initiated an ISFSI. Consequently, I do not view this approach meeting the typical process of considering unique factors for the site and facility; that is, a case-by-case evaluation of the post-9/11 security needs for an individual ISFSI. Rather, I am concerned that this necessary approach of implementing identical security orders—that could remain in place for multiple decades or even up to a century—is short-circuiting the normal rulemaking process with its notice and opportunity for public comment.

Moreover, the requirements of 10 CFR 73.51 would also apply to an MRS or a GROA that the DOE would operate as a licensee of the NRC. Resolution of these issues via a rulemaking process would facilitate DOE's planning efforts for an application and staff efforts to review such applications. Accordingly, I view the use of the agency's rulemaking process to accomplish the above objectives as providing the greatest openness and transparency to the public, licensees and other stakeholders; clarity by removing unworkable provisions; and reliability by treating identical facilities consistently.

In summary, I believe that the totality of (1) the staff's analysis in Enclosure 3 to SECY-07-0148, (2) the staff's current assessment of a lack of a technically viable release-fraction methodology to support a dose-based regulatory approach, and (3) the staff's low confidence that without the further expenditure of significant time and contract funds could achieve a technically viable release-fraction methodology be developed warrants the Commission's reconsideration of the available options for rulemaking. In this regard, I view a DBT-based rulemaking approach as the only technically viable option remaining if the Commission desires to promptly proceed to rulemaking.

Additionally, I view a substantive reassessment process discussed under paragraph 1 of Option 4 of this paper as viable, but an unnecessary expenditure of agency resources. I view the Commission's previous detailed consideration of SECY-07-0148 of the DBT-based approach and the information provided by this paper as obviating the need for a substantive reassessment, when informed by the nonviability of a release fraction methodology.

Therefore, in considering the action options in this paper, I would recommend the Commission consider and approve a new rulemaking Option X that combines Option 2 and elements of Option 4 involving the DBT for radiological sabotage. I would also recommend the removal of the unworkable 0.05 Sv (5 rem) dose criterion in 10 CFR 73.51 in all circumstances and harmonize relevant language to achieve consistent security program requirements for identical SNF storage facilities. I would recommend that Option X consist of the following objectives.

- Codify and sunset, to the maximum extent practicable, the post-9/11 ISFSI security orders for both general-license and specific-license ISFSIs.
- Revise 10 CFR 73.51 to apply the DBT for radiological sabotage to licensees subject to this regulation, in a manner consistent with the performance-based language currently applicable to general-license ISFSIs subject to the DBT for radiological sabotage under 10 CFR 73.55.
- Remove the 0.05 Sv (5 rem) dose limit acceptance criterion for security-based events under 10 CFR 73.51 for the classes of licensees subject to this regulation.
- Make corrective and conforming changes arising from the application of the DBT for radiological sabotage to ensure consistency in 10 CFR 73.51, 10 CFR 72.180, and 10 CFR 73.1.
- Develop an updated ISFSI adversary characteristics guidance document that would be bounded by the adversary characteristics contained in RG 5.69, Revision 1.

I believe that by leveraging previous staff efforts, the staff can proceed promptly to the next step of a rulemaking (i.e., the development of an updated regulatory basis) without requiring the substantial reassessment effort envisioned by staff under Option 4, paragraph 1.

### **Recommendations**

Accordingly, I recommend as an alternate (differing) view that the Commission take the following actions:

- (1) Consider and approve a new Option "X" for an ISFSI security rulemaking as specified above.
- (2) If the Commission determines that conducting a security rulemaking is appropriate, then the Commission should:
  - a. Direct the staff to proceed to the next steps in rulemaking (i.e., the development of an updated regulatory basis) without conducting a "substantive reassessment" of ISFSI security issues.
  - b. Direct the staff to also develop an updated draft adversary characteristics document for ISFSIs subject to the DBT for radiological sabotage that is bounded by RG 5.69, Revision 1. This updated draft adversary characteristics document should be submitted to the Commission for its review in parallel with the submission of a proposed rule.
  - c. Direct the staff to include a specific discussion and request for comments in a proposed security rule of whether, under Section 170D of the AEA, conducting security evaluations that include force-on-force exercises is appropriate for an ISFSI licensee implementing a "detect, assess, and communicate" protective strategy under the DBT for radiological sabotage.

CONTACT: Philip Brochman, NSIR/DPCP  
(301) 287-3691