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Ms. Cindy K. Bladey
Chief, Rules, Announcements, and Directives Branch (RADB)
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: NEI comments on Draft Regulatory Guide (DG) DG-5057, Special Nuclear Material Control and Accounting System for Non-Fuel Cycle Facilities; Docket ID NRC-2015-0120

Project Number: 689

Dear Ms. Bladey:

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI)¹ appreciates the opportunity to provide comments on Draft Regulatory Guide DG-5057; "Special Nuclear Material Control and Accounting System for Non-Fuel Cycle Facilities" (Docket ID NRC-2015-0120).

The purpose of DG-5057, a revision to Regulatory Guide 5.29, is to provide non-fuel cycle facilities applicants and licensees with a method to demonstrate compliance with the U.S. Nuclear Regulatory Commission (NRC) Material Control and Accounting (MC&A) requirements applicable to special nuclear material (SNM). The guidance outlined in DG-5057 reflects the proposed 10 CFR Part 74 rule that was published for comment in November 2013. Our overarching concern is that the Part 74 preliminary final rule language, which is the basis for revising DG-5057, largely remains unchanged despite extensive industry comments about the proposed rule's flawed regulatory analysis and basis, and the lack of a backfit analysis. The proposed rule's failure to take a risk-informed graded approach with regard to the level or type of material being protected has led to a draft regulatory guide that likewise unjustifiably attempts to align the requirements for lower-risk facilities with those for higher-risk facilities. In fact, the draft guide goes even further than the preliminary final rule by suggesting heightened standards are necessary for non-fuel cycle facilities in areas where no changes to the underlying regulations have been proposed. For this reason, the industry reiterates that the NRC should discontinue its efforts to "strengthen" MC&A requirements.

¹ The Nuclear Energy Institute (NEI) is the organization responsible for establishing unified industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations and entities involved in the nuclear energy industry.

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Without these unnecessary changes to Part 74 and NRC guidance, the final rule and regulatory guide would (and should) look very different from the proposed rule and draft regulatory guide. Accordingly, industry recommends that DG-5057 be revised to reflect the final rule and made available again for public comment when the final rule is published.

Furthermore, several DG-5057 sections address the reporting and inventory requirements for all SNM in 10 CFR 74.19(a) and (c). Significant efforts have been expended by industry and NRC on Security Frequently Asked Questions addressing these requirements for non-fuel SNM at power reactors. These efforts initially focused on whether the term "all" SNM could be interpreted as a reportable quantity, but the focus shifted. Rather than addressing whether lower quantities might be exempt from reporting and inventory requirements, the focus turned to whether existing requirements could be implemented consistent with risk-based concepts as to what SNM is truly important from a regulatory perspective. Specifically, these efforts focused on establishing a risk-informed graded approach whereby the level of effort needed to comply with reporting and inventory requirements would be commensurate with the risk and SNM quantities involved. Nothing in 10 CFR 74.19(a) and (c) prohibits such an approach and ANSI N15.8-2009 appears to allow such an approach. Accordingly, the revision of Regulatory Guide 5.29 should endorse the use of a graded approach to satisfy Part 74's inventory and recordkeeping requirements in a manner that appropriately reflects the risk of small quantities of non-fuel SNM at power reactors.

Attached are specific industry comments and recommended changes based on our review of DG-5057 for NRC's consideration if the Part 74 rulemaking moves forward. We appreciate your consideration of these comments. If you have any questions, please contact me, or Nima Ashkeboussi (202.739.8022; nxa@nei.org).

Sincerely,



Janet R. Schlueter

Attachment

c: Mr. Tom Pham, NMSS/FCSE/MCAB, NRC
Mr. Thomas Young, NMSS/MSTR/RPMB, NRC
Mr. Peter Habighorst, NMSS/FCSE/MCAB, NRC
Ms. Marissa Bailey, NMSS/FCSE, NRC

NEI Comments on DG-5057 – 7/30/15

Affected Section	Comment/Basis	Proposed Resolution
1. General	Clarify the applicability of Part 74 and DG-5057 to licensees with less than 1 gram of SNM at adjacent licensee facilities (lab or calibration facility)	Provide clarification.
2. General	Regulatory Guide 5.29 has expanded its scope from applicability to nuclear plants to all non-fuel facilities. This large expansion and inclusion of very prescriptive details can create heavy burdens on some licensees and doesn't taken into account the vast differences and capabilities of all non-fuel facilities. Treating all of these facilities the same will create problems.	Propose splitting the guidance between power reactors, labs, research and test reactors, ISFSIs, etc. to reflect the vast differences that exist between licensees that DG-5057 is not addressing.
3. General	DG-5057 has retained ANSI N15.8 as a piece of compliance and directly adopted some of the standard into the draft Reg. Guide. Clarify if the continued, sole use of N15.8 is sufficient to meet the MC&A regulatory requirements.	Clarify if the continued implementation of an MC&A program under ANSI N15.8 meets the requirements of Part 74.
4. General	DG-5057 contains additional requirements for protection of SNM. Although it specifically addresses SNM which typically resides in spent fuel pools in power reactors, there is no discussion about security protection from Part 73.	DG-5057 should be revised to take into account Part 73 requirements that licensees are already implementing and reflect the fact that sites have extensive physical and personnel security programs.
5. General	From a protection perspective, should there be any discussion around storage of SNM inside protected areas or attributes of storage areas outside of protected areas that would make such storage sufficient?	Provide clarification or additional information on the storage and protection of SNM.

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6. B. Discussion; 1 st paragraph; page 3	"This RG expands the scope of the guidance to cover additional MC&A requirements that may be added to Part 74...". The draft Regulatory Guide should reflect the proposed rule, and not requirements that "may" be added later.	The Regulatory Guide should reflect the proposed rule. Providing the final rule with DG-5057, as opposed to reviewing the Regulatory Guide against a draft rule would allow for a more accurate and informed review.
7. B. Harmonization with International Standards; page 4	This Section discusses harmonization of DG-5057 with IAEA's Nuclear Material Accounting Handbook and incorporates similar guidelines. IAEA's inspection and security rules associated with power reactors are intended to prevent government agencies from diverting material from nuclear reactors to clandestine separation facilities for use in nuclear devices. US nuclear facilities are not government agencies. DG-5057 language outlines security measures that are unnecessary and overly burdensome.	The IAEA discussion might give the impression that additional requirements are required beyond Parts 73 and 74. Provide clarification and revisions that adopted IAEA Nuclear Material Accounting Handbook security guidelines reflect the existing Part 73 security requirements.
8. C.1.A(1); page 5	Meaning of the word "reliable"	Provide clarification on the expectation or meaning of "reliable" in practical terms.
9. C.1.A(2); page 5	Reliable information is identified as "...item locations are specific enough so as to provide for the retrieval of the items in a prompt manner." What consideration is taken into account for items that are not accessible? In this case, what would be considered "reliable" and "valid"?	Provide clarification.
10. C.1.A(3); page 5	What constitutes "accurate" measurement? Does the licensee need to do it or can they rely on the shipper? Are "calculations" considered to be a measurement? How does one measure the activity in a steam generator shipped off site, or if fuel is being "shipped" to a site specific ISFSI how is this "measurement" to be accomplished?	Provide clarification.
11. C.1.A(4); page 5	Clarification is needed on the phrase "verifying the	

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	presence", at what frequency is this to be done and is the use of records acceptable for inaccessible items?	Provide clarification on "verifying the presence" and its equivalency, or not, to an "inventory". Provide clarification on the frequency and use of records.
12. C.1.A(4); page 5	The statement "The MC&A system should be capable of verifying the presence of 100 percent of all <i>uniquely identified</i> SNM items..." requires clarification. Licensees may have small quantities of SNM distributed in systems, for example in the RCS or in out of service steam generators or in laundry, that cannot be easily quantified or <i>uniquely identified</i> . In this instance would a licensee not include in inventory small quantities of distributed SNM?	Clarification of the phrase "uniquely identified" should be sought and documented.
13. C.1.A(5); page 5 and C.2.A(6); page 7	Sections A(5) and A(6) discuss independent management of the physical inventory program and "separation-of-duty between MC&A personnel and operations". These are not in the draft regulations for non-fuel cycle facilities that require separation between the MC&A program and the operations organization. It is not uncommon for the operations organization to perform the inventories.	Removal of A(5) from, General Performance Objectives; and "separation-of-duty between MC&A personnel and operations" from A(6), Item Control Systems.
14. C.1.B; page 6 and C.1.E; page 6.	The title for Section B, "Detect, respond to, and resolve any anomaly indicating a possible loss, theft, diversion, or misuse of SNM" and Section E, "Control access to MC&A information that might assist adversaries to carry out acts of theft, diversion, misuse, or radiological sabotage" is in conflict with the title and changes presented in slides of	Clarify the differences between the wording in DG-5057 and the March 2015 public meeting.

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	NRC's March 5, 2015 public meeting on Part 74.	
15. C.1.B(2); page 6	Section B(2) discusses having "reliable information on the quantities and locations of all licensable "non-exempt" SNM", but C.1.A refers to "all" and "100 percent".	Provide clarification on the discrepancies between 1.B(2) and 1.A in regards to the type of information that needs to be collected for SNM.
16. C.1.D(1); page 6	Section D(1) discusses the need for licensees to assist NRC or another government agency in an investigation. Are there criteria or a threshold that initiate this investigation?	Clarify if any criteria exist.
17. C.1.E; page 6	Section E discusses control access to MC&A information. Licensees routinely share annual SNM reports with coworkers and managers, who have a need to know. Copies of inventories, sometime going back many decades, are stored in Corporate Document Control with no controls, i.e. anyone with network access can look them up. It would appear that this proposed revision could subject vast amounts of information that is currently handled under record control protocols for each facility to be significantly changed to incorporate undefined increased controls.	Provide additional guidance and clarification on what sort of controls are expected for SNM physical inventory reports. This guidance should state that MC&A information does not require controls greater than required for 10 CFR 2.390 information. Locked cabinets/computer network programs with user permissions should be sufficient to meet this requirement.
18. C.2.A(4) and C.2.A(5); Page 7	Section A(4) states "A measurements program with the capability to determine the SNM characteristics needed to establish or authenticate material items", and Section A(5) describes "A measurements control program that assures an adequate level of measurement capability and accuracy to meet operational and security requirements". It is not clear what measurement capabilities are required on site for a Power Plant. Earlier in the RG, Section 1.A(2), states that "weight that should be based on measured values <u>or</u>	Many power reactors do not have on-site capability to measure the vast majority of SNM, including material inside fuel rods or other encapsulated sources, but rely on other reliable factors for the majority of SNM values. Therefore the term "measurements" in Sections A(4) and A(5) should be clarified and be consistent with 1.A(2) to allow for licensees to verify weight through "other reliable factors".

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	<p>on other reliable factors". Reactor sites are not national labs or experimental facilities and not equipped to perform such measurements (as this RG is written).</p>	
19. C.2.C; page 8	<p>The establishment of a numbering system as described in this section is overly prescriptive and, while nice, does not provide any noticeable improvement or security much less evidence that the benefit is commiserate with the cost. Best practices implemented by licensees should not become requirements.</p>	<p>Consider reducing the prescriptiveness of the guidance for establishment of an Item Control Number System.</p>
20. C.2.C(2); page 8	<p>Section C(2) describes a tamper indicating device (TID) program which includes how to ensure duplicate (counterfeit) are not manufactured and how they are used and disposed of. There is no requirement in the current regulations or in the Proposed Rulemaking for a tamper safing program as described in the RG. The proposed rule does discuss this kind of program for Category I, II, and III fuel cycle facilities, but states "No requirement" in Table 1 for Part 50 power reactors or ISFSIs. Since it is not being required by the regulations (current or proposed) it should not be in the Reg. Guide.</p>	<p>Revise DG-5057 to remove TID program.</p>
21. C.2.C(3) & (4); page 8 and C.2.D; page 9	<p>Sections C(3) and (4) and Section D discuss tailoring a numbering system to fit the type of operation and Identity Cards. This is not required by the current regulations or in the proposed Rulemaking. While it may be more appropriate to fuel cycle facilities, it is not necessary for power reactors and ISFSIs. It is recognized that under the proposed Rulemaking that power reactors and ISFSIs will need an "Item Control System" which is proposed in</p>	<p>Revise DG-5057 to be less complex and prescriptive.</p>

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	the Rulemaking to be added to the definition in 10CFR74.4 as "a system for tracking the creation, identity, element and isotopic content, location, and disposition of all items, which would enable the licensee to maintain current knowledge of each item in its possession." Most power reactors and ISFSIs already have some form of this, but it doesn't need complexity of the requirements of Items 2.C.3 and for of the proposed Reg. Guide.	
22. C.2.E; page 10	Section 2.E, Item Input Control and Receipt of SNM, numbers 1-4 lists actions licenses should take for SNM received at their facility "as required by 10 CFR 74.11". The current 74.11 requirements and changes to 74.11 in the proposed rule do not address this subject. The only requirements in 74.11 are to notify NRC.	Consider removing Section 2.E from DG-5057, or removing the reference to 10 CFR 74.11, since the actions listed in 2.E are not requirements under 74.11.
23. C.2.E(2); page 10	Section 2.E(2) implies that all SNM is shipped with TIDs. This isn't always the case with sample HP SNM samples.	Revise Section 2.E(2) to: "verify the integrity of the shipping container and tamper-safing devices, if used, and resolve any problems identified;"
24. C.2.F; page 10	Section 2.F implies that licenses are to audit suppliers MC&A programs and systems. If that is the case, it is not realistic or achievable.	Provide clarification on Section 2.F. If the intent is to audit suppliers MC&A programs, this section should not be included in DG-5057.
25. C.2.J; page 11	Section 2.J discusses Reducing Vulnerability to SNM Loss or Diversion From Insider Actions. This subject is related to the physical security of SNM, not MC&A. The physical security of SNM is more likely to be handled by a site's nuclear security force and is generally considered to be Safeguards Information.	From an MC&A perspective this section should not be included in DG-5057.
26. C.2.J(3); page 11	Section J(3) advises to place TIDs on empty containers.	Tracking should only occur on containers and

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	Placing TIDs on empty containers would greatly increase the scope of tracking to the point of making it untenable. Given the potential size of any SNM to be tracked (as currently defined) makes every container on site subject to a TID.	packages that contain SNM. Section 2.J(3) should be removed from DG-5057.
27. C.2.K; page 11	How is this item monitoring system different from the inventory? How often is this "monitoring" supposed to take place? What frequency and scope would constitute and effective monitoring program?	Provide clarification.
28. C.2K(1)(c); page 12	Section 2.K(1)(c) states a licensee should maintain a system of item monitoring that can detect, with high probability, any real loss of items, or SNM from items. Licensee should devise and use technical acceptable statistical methods for evaluating SNM quantities with a 95% confidence level." This is not required for power reactor or ISFSIs by any current or proposed Rulemaking. The wording resembles that in 10CFR 74.55(b) which discusses verifying the presence of Strategic Special Nuclear Material on a statistical sampling basis. This regulation applies to Category 1 licensees that fabricate highly enriched fuel for the Navy. Would this item require the ability to detect a fuel pellet missing from a fuel rod even if this is not a credible event?	The intent and purpose of this is not clear. Section K(1)(c) is not in the draft General Performance Objectives and should not be included in DG-5057.
29. C.2.K(2); page 12	Section 2.K(2) discusses a monthly comparison of actual storage status to the recorded status of a sufficient sample of randomly selected items and to check the accuracy of the MC&A records. This is not a requirement in current regulation or the proposed Rulemaking. At a	Remove the "monthly" frequency in 2.K(2) to read "As part of its items monitoring system, a licensee should conduct the following activities:" The frequency of these activities should be

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	<p>power reactor, it is common for many months to pass without moving any fuel, and the value of performing monthly verifications, even of limited scope, is not a value added activity.</p> <p>Furthermore, Section 2.K(3) states that the frequency should be based on prior operational experience.</p>	determined by the licensee per the existing wording in 2.K(3) and justified in their MC&A program.
30. C.2.K(2)(b); page 12	It's unclear what the use of the word "stratum" is in this context.	Suggest deleting "stratum" or replacing it with a more useful word.
31. C.3.D and C.3.E; page 13	Sections 3.D and E contain almost identical language to 10CFR 74.43(c)(5), which are requirements for fuel cycle facilities, not power reactors and ISFSIs. They are not in the current regulations or the proposed Rulemaking and are unnecessary for the proper control of SNM.	Sections C.3.D and C.3.E should not be included in DG-5057.
32. C.3.F(3); page 14	Section 3.F(3) discusses measurements and limits of error. Nuclear power plants and ISFSIs do not perform measurements or limits of error.	Section 3.F(3) should not be included in DG-5057.
33. C.3.F(5); page 14	Section 3.F(5) discusses specifying frequencies when physical inventories of each area is to be performed. 10CFR 74.19(c) and 10CFR 72.72(b) already establish that a physical inventory is performed at intervals not to exceed 12 months. This item in the proposed draft Reg. Guide contradicts the already established requirement.	Section 3.F(5) should not be included in DG-5057 because regulations establishing the frequency of conducting inventories already exist.

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34. C.3.G(1); page 14	Section 3.G(1) discusses the makeup of the team performing the inventory as being independent from site operations, the SNM Custodian, and MC&A "measurements" personnel. These are not in the draft regulations for non-fuel cycle facilities that require separation between the MC&A program and the operations organization. There is no experience with "insider" theft which justifies this requirement of complete and total independence.	Section 3.G(1) should not be included in DG-5057.
35. C.3.H; page 15	Section 3.H, Calculations, seems to contradict all previous instances in DG-5057 where it was stated that "measurement" was needed. The role of calculations instead of measurement is not clear and does not appear to be consistent.	Provide clarification on the use of measurements and calculations throughout DG-5057 and if they are interchangeable.
36. C.3.I(1) and C.3.I(2); page 16	Section 3.I provides additional "guidance" for the performance of the inventory. Sections 3.I(1) & 3.I(2) discuss personnel being prepared with appropriate "clothing, shoes, flashlights, tools, and writing equipment..." and the performance of "safety briefings." These items are very basic practice standards for power reactors/ISFSIs and are unnecessary for inclusion into a Reg. Guide.	Sections 3.I(1) and 3.I(2) should not be included in DG-5057 to reduce the unnecessary level of detail and over prescriptiveness.
37. C.3.I(3); page 16	Section 3.I(3) implies the existence of a 2-person rule which is not part of the current or proposed regulations. The November 8, 2013 Federal Register notice specifically states that the 2-person rule is not being proposed.	Section 3.I(3) should be removed from DG-5057.
38. C.4.B; page 16	Section B contains a reference to 74.19(e). This is not part of the current or proposed rulemaking.	Remove the reference to 74.19(e).
39. C.4.E through J; page 17	Sections 4.E-J contains similar requirements to those required for fuel cycle facilities. Sections G and H discuss shipper-receiver differences and measurement equipment	Retention of records requirements are already specified in other regulations and do not need to be restated in DG-5057.

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	<p>which are not used by power reactors/ISFSIs. Section E calls for data presented for inclusion into the database to be written down with the signature of the individual providing the data. Most of the data are transferred electronically with no signatures recorded.</p>	
40. C.4.I; page 17	<p>Section 4.I discusses MC&A records receiving the appropriate level of protection needed for security purposes and that access to such records should be restricted to authorized individuals. It is acknowledged that in the proposed Rulemaking that a new General Performance Objective (10CFR74.3.e) will be added to "control access to MC&A information that might assist adversaries to carry out acts of theft..." MC&A records are permanent plant records which are retained by document control but can be viewed on-line by most plant personnel. Most plants procedures already have requirements that records can only be changed by the organization responsible for the record, and the change must be approved by a Supervisor. Copies of original MC&A records may be retained locally in file cabinets for ease of access to MC&A personnel. Since all permanent records are stored securely in a vault, it is unclear if the proposed Rulemaking applies to any and all copies that are retained locally.</p>	<p>It would be useful for the Reg. Guide to provide practical guidance as to whether file cabinets that contain copies of the original documents need to be locked, or if controlled access to the building via keycard is sufficient.</p>
41. C.4.I; page 17	<p>Section 4.I appears to bring MC&A records under the security umbrella, which will impact the ability to share information with people who need it as well as also affecting the control of any paper provided for doing any site business which deals with SNM. Part 73 security is</p>	<p>Provide clarification.</p>

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	sufficient. What problems have been had with this current security situation that need to be fixed and how do these security requirement mesh with all the electronic backups that are supposed to be implemented? How will we be able to transmit data to NMMSS under these security controls?	