SFST Response to Public Comments on ISG-1, Revision 2

Commenter 1

Comment 1: Line 102 - Revise the definition of damaged SNF such that it would correspond to the illustration in Figure 1. Commenter recommends - Damaged SNF - Any fuel rod or fuel assembly that cannot meet fuel-specific or system-related functions.

SFST Reply - Change made in text.

Comment 2: Lines 103 and 104 - Revise the definition of undamaged SNF such that it would correspond to the illustration in Figure 1 and be consistent with the definitions for breached spent fuel rod and assembly defect. Commenter recommends: Undamaged SNF - SNF that can meet fuel-specific and system related functions. As shown in Figure 1, undamaged SNF may include "breached spent fuel rods". Also, a fuel assembly classified as undamaged SNF may have "assembly defects".

SFST Response - Last sentence of recommended change added to text.

Comment 3: Lines 106-108 - Revise the definition of breached spent fuel rod. The recommended revision describes and encompasses the full scope of breached spent fuel rod discussed in the ISG. Commenter recommends: Breached spent fuel rod - A spent fuel rod with cladding defects sufficient to permit the release of gas from the interior of the fuel rod. A breached spent fuel rod may also have cladding defects sufficient to permit the release of heavy metal isotopes and fuel particulates. A breach may be limited to a pinhole leak or hairline crack, or may be a gross breach.

SFST Response - Change made in text.

Comment 4: Lines 110-113 - Revise the definition of pinhole leaks or hairline cracks. This definition incorporates the conclusions presented in the discussion of gross defects presented later in the ISG. The definition also removes ambiguity inherent in determining significance of release of particulate matter. Last, the definition permits determination that breaches are pinhole leaks or hairline cracks without the need to conduct a visual examination (or other kind of physical examination) of the nuclear fuel. Commenter recommends: Pinhole leaks or hairline cracks - 1) any minor cladding breach having a crack-width or pinhole diameter that does not exceed 1 mm or, 2) any cladding breach where review of reactor operating records provides evidence of only gaseous or volatile decay products and no presence of heavy metal isotopes.

SFST Response - Rejected. The suggested change makes the definition more quantitative; but, operators may interpret this as a requirement that they need to measure the pinhole or crack. The intent of the discussion in the text was to direct the operators to look for exposure of the fuel, not measure the crack in order to determine if the pinhole or crack is gross.

Comment 5: Lines 115-118 - Revise the definition of grossly breached SNF rod. The recommended revision (a) ensures consideration is given to the potential for grossly breached rods to be interior rods in a fuel assembly; (b) incorporates the conclusions presented in the

discussion of gross defects presented later in the ISG; and (c) permits determination that SNF rods are grossly breached without need to conduct a visual examination (or other kind of physical examination) of the nuclear fuel. Commenter recommends: Grossly breached SNF rod - A subset of breached spent fuel rods. A breach in spent-fuel cladding that is larger than a pinhole leak or a hairline crack. An acceptable examination for a gross breach is a visual examination that has the capability (a) to identify a fuel rod having a breach with a crack-width or pinhole diameter greater than 1 mm or (b) to determine the fuel pellet surface may be seen through the breached portion of the cladding. Alternatively, review of reactor operating records may provide evidence of the presence of heavy metal isotopes indicating that a fuel rod is grossly breached. (See discussion of size concerns.)

SFST Response - Changes have been made in the text to add the sentence related to records examination. Comment on the size of the defect has been rejected. (See comment 4 response.)

Comment 6: Lines 125-133 - Revise the definition of damaged fuel can and change the term being defined. The recommended revision achieves the full intent of the ISG without risk of overreaching in listing functional requirements. The term “Damaged fuel can” should be changed to “Fuel can for damaged spent fuel” in order to avoid any misunderstanding that the can which contains damaged fuel is itself damaged. Commenter recommends: Fuel can for damaged spent fuel - A metal enclosure for containing one damaged spent-fuel assembly. A fuel can for damaged spent fuel with damaged spent-fuel assembly contents must satisfy fuel-specific and system-related functions for undamaged SNF required by the applicable regulations.

SFST Response - Suggested change made.

Comment 7: Lines 135-139 - Revise the definition of assembly defect to remove the use of the term “degradation”, which is not defined or otherwise used. Commenter recommends: Assembly Defect - Any change in the physical as-built condition of a nuclear fuel assembly with the exception of normal in-reactor changes such as elongation from irradiation growth or assembly bow. Examples of assembly defects include: (a) missing rods; (b) broken or missing grids or grid straps (spacers); and (c) missing or broken grid springs. An assembly with a defect is undamaged if it can satisfy the fuel-specific and system-related functions required by the applicable regulations.

SFST Response - Change made.

Comment 8: Lines 148, 152, and 163 - Remove references to “stage of the back-end of the fuel cycle” from discussion of Damaged Fuel in the Background section of the ISG. The stage of the back-end of the fuel cycle of spent fuel is not relevant to the guidance provided in ISG-1, Revision 2. The guidance addresses only classification of the condition of spent fuel for purposes of evaluating applications to the NRC for licenses or certificates of compliances under regulations contained in 10 CFR 71 and 10 CFR 72. Commenter recommends:

1. Line 148: Delete, “irrespective of the stage of the back end of the fuel cycle and”
2. Lines 151-153: Replace “Thus, the characteristics of damaged spent fuel may depend on (1) which stage the fuel is in within the back end of the fuel cycle, and (2) the design of the

storage or transportation system." with "Thus, the characteristics of spent fuel that may classify it as damaged depend on the design of the storage or transportation system."
3. Lines 163 - 164: Delete "1) The phase of the back end of the fuel cycle for which the definition is applicable (storage, transportation, or both);"
4. Line 166: Renumber previous item 2 to be item 1.
5. Line 168: Replace "designated phase;" with "designated phase (storage or transportation);"
6. Line 170: Renumber previous item 3 to be item 2.
7. Line 173: Renumber previous item 4 to be item 3.
8. Lines 177-178: Replace "5) The physical characteristics of the fuel, based on item #4, above, that could cause the fuel or assembly to be classified as "damaged."" with "4) The physical characteristics of the fuel, based on item #3, above, that could cause the fuel or assembly to be classified as "damaged.""
9. Line 185: Replace "items number 1 through 5 above [2]." with "…items number 1 through 4 above [2]."

SFST Response - (1,2&3) word changes made to reflect that this ISG only applies to storage and transportation. (5-9) renumbering not needed since step not removed in #1.

Comment 9: Lines 156-159 - As discussed in the ISG, spent fuel may be classified as damaged for storage but undamaged for transportation. The unrevised text suggests that if damaged for any application the spent fuel would be considered damaged for all applications. Also, the ISG does not encompass classification of fuel when it is being irradiated. Commenter recommends: If this alteration is large enough to prevent the fuel or assembly from performing its regulatory functions during storage or transportation (whichever is applicable), then the fuel or assembly is considered damaged.

SFST Response - Change accepted and made.

Comment 10: Line 270 - Add a sentence to the discussion under section C (Canning Damaged Fuel) to complete the section. Commenter recommends: A fuel can for damaged spent fuel with damaged spent-fuel assembly contents must satisfy fuel-specific and system-related functions for undamaged SNF required by the applicable regulations.

SFST Response - Change made in text.

Comment 11: Lines 282-289 - Revise the statement in the draft ISG which contains the statement "…all breached rods may be considered damaged…" to improve clarity and avoid making an overreaching conclusion. For example, the free volume of a TN-32 dry storage cask is approximately 5.4 m^3. If this volume were filled with air at STP the available oxygen would be sufficient to oxidize about 40 kg of UO_2 (20 PWR fuel rods) to U_3O_8. While it would not be desirable for any UO_2 in SNF rods to oxidize, it seems likely that, for the scenario presented in the ISG, only a fraction of defective rods would develop gross defects. Commenter recommends: For example, an applicant might propose the use of air as a cover gas in its design of a storage cask. The applicant might also propose this cask could be used to store spent fuel with cladding breaches that are hairline cracks or pinhole leaks. The applicant may assert that this SNF should be classified as undamaged. However, if the spent fuel in the cask will operate at a sufficiently high temperature for a long enough time, then oxidation of fuel pellets in breached rods and subsequent gross breaches could occur. If this is the case, the

condition of the spent fuel would change from undamaged to damaged because grossly breached rods do not meet the requirements of 10 CFR 72.122(h)(1). Also, in this case because the geometric form of the package contents could be substantially altered, the spent fuel would also be classified as damaged for transportation because the requirements of 10 CFR 71.55(d)(2) might not be met. If an inert atmosphere was used instead of air, only grossly breached rods would be considered damaged for storage. This concept is illustrated in Figure 1, "Relationship of Spent Fuel Populations."

SFST Response - Modification of suggested change made in the text.

Comment 12: Figure 1, Between Lines 283 and 284 - Revise Figure 1. This change is necessary to make the illustration in Figure 1 consistent with definitions presented earlier in the ISG. Commenter recommends: The arrow connecting the box with the label "Intact SNF (no breaches)" should connect directly to a new decision diamond with the label "Fuel Assembly Defects?". An arrow labeled "no" should connect this new decision diamond to the box with the label "Undamaged". An arrow labeled "yes" should connect the new decision diamond to the existing decision diamond with the label "Can SNF meet all fuel-specific and system-related functions?". Also, all arrows that are shown in the existing figure to enter the decision diamond labeled "Can SNF meet all fuel-specific and system-related functions?" should instead enter the suggested new decision diamond labeled "Fuel Assembly Defects?"

SFST Response - Changes made to figure.

Comment 13: Line 3 - Revise the title of the ISG to better convey the subject of the ISG. The recommended title is derived from lines 9 through 11. The recommended title is: "CLASSIFYING THE PHYSICAL AND FUNCTIONAL CONDITION OF SPENT NUCLEAR FUEL FOR INTERIM STORAGE OR TRANSPORTATION".

SFST Response - Change made to document title reflecting suggestion.

Comment 14: Lines 120-123 - Revise "Intact SNF - Any fuel that can fulfill all fuel-specific and system-related regulations, and that is not breached. Note that all intact SNF is undamaged, but not all undamaged fuel is intact, since under most situations, breached spent fuel rods that are not grossly breached will be considered undamaged." to read "Intact SNF - Any spent fuel that can fulfill fuel-specific and system-related functions required by the applicable regulations and that is not breached."

SFST Response - No change made. The sentence requested to be removed provides clarification.

Comment 15: Lines 182-185 - Revise "Damaged SNF, as defined in this guidance, will only be approved for the activity (storage or transportation) for which the application is being submitted. Note that the "default" definition of damaged SNF, derived from ANSI N14.33-2005 is provided in the appendix of this guidance for those that do not want [to] perform the assessment outlined in items number 1 through 5 above [2]." to read "Undamaged SNF, as defined in this guidance, will only be approved for the activity (storage or transportation) for which the application is being submitted. Note that a "default" definition of damaged SNF, derived from ANSI N14.33-2005, is provided in the appendix to this guidance for use if the assessments outlined in 1 through 4

above are not performed. Also, if the "default" definition is used, undamaged SNF includes all SNF that is not classified as damaged SNF. The default definition, however……."

SFST Response - Rejected. The requested change does not convey the full meaning of the paragraph as now written.

Comment 16: Lines 264-265 - Revise the term "damaged fuel can" with new term "fuel can for damaged spent fuel" as proposed in comment # 6 above.

SFST Response - Done.

Comment 17: Line 265 - Revise the term "damaged fuel can" with new term "fuel can for damaged spent fuel" as proposed in comment # 6 above.

SFST Response - Done.

Comment 18: Line 268 - Revise the term "damaged-fuel can" with new term "fuel can for damaged spent fuel" as proposed in comment # 6 above.

SFST Response - Done.

Comment 19: Figure 1 (Between lines 283 and 284) - Delete the word "all" from the decision diamond with the label "Can SNF meet all fuel-specific and system-related functions?"

SFST Response - Done.

Comment 20: Line 376 - The term "intact fuel" is also used in SFPO-ISG-22, "Potential Rod Splitting Due to Exposure to an Oxidizing Atmosphere During Short-Term Cask Loading Operations in LWR or Other Uranium Oxide Based Fuel", Revision 0. Consider revising ISG-22 to reflect the definitions in SFPO-ISG-01, Revision 2 when it becomes final.

SFST Response - See commenter #3 comment 20.

Commenter 2

Comment 1: We welcome this ISG revision. The performance-based approach should put the damaged fuel evaluation on a more practical basis, and reduce the number of assemblies that would be unnecessarily placed into canisters. The definitions in the ISG distinguishing between intact and undamaged fuel, and the clarification on fuel defects, will be extremely helpful in that respect.

SFST Response - Thank you.

Comment 2: However, while the ISG provides guidance on the technical basis for this performance-based approach, it does not appear to give sufficient guidance on the practical implementation and the licensing approach. Specifically, there is no guidance on the type and level of detail in the transport or storage CoCs, the level of analyses in the SAR or FSAR, or the process of showing compliance for a specific assembly. Leaving this part to future applicants of

licenses and license amendments rather addressing it in the ISG would unnecessarily prolong the implementation of this important ISG. The following discussion outlines a recommended approach and provides an example.

With the performance-based approach to damaged fuel, it would naturally follow that:

- The damaged fuel definition in the CoCs also needs to be performance-based, rather than characteristic-based.

- The SAR or FSAR would then contain the description of the methodology that needs to be used to show compliance with the CoC requirements, including sample calculations.

- To qualify a specific fuel assembly, the user of the system would perform the evaluations or calculations prescribed in the SAR or FSAR, to show compliance with the performance requirements set out in the CoC.

The need for this approach is highlighted using the example of the qualification of assemblies with missing fuel rods as undamaged:

- Background: Missing fuel rods can potentially result in an increase of reactivity.

- CoC: For a given cask loading, there would be a virtually unlimited number of possible configurations involving missing fuel rods. Any characteristics-based damage fuel definition in the CoC is therefore extremely problematic. Listing permissible configurations in the CoC is obviously not viable. Listing bounding characteristics (e.g., all configurations with missing rods, or, all configurations with no more than x missing rods per cask or assembly) might be possible, but would still require a very large number of supporting calculations to demonstrate acceptability. This number would most likely by far exceed the number of actual assemblies with missing rods. If the actual number of the assemblies with missing rods among clients is small, it might be possible to analyze all of these and list them in the CoC. However, this would require amendment requests for new clients with such assemblies, or new assemblies with missing rods. The most effective solution that avoids these problems is a performance-based definition of missing fuel rods in the CoC. This could state that missing rods are acceptable as long as a certain limit in reactivity, or a limit in the change in reactivity, is not exceeded.

- FSAR and SAR: As stated above, any characteristics-based CoC definition of damaged fuel would require a larger number of calculations than can practically be performed and/or documented in the SAR of FSAR. For a performance-based damaged fuel definition in the CoC, however, the SAR or FSAR simply defines the methodology or the approach that needs to be used to show compliance with the CoC.

- User: The user of the system, not the designer or vendor, has the final responsibility to show that the loaded content meets the requirements. The user also typically has the most extensive knowledge of the condition of the fuel. Enabling the user to determine whether a specific assembly is damaged or undamaged through evaluation or analysis would therefore be the most effective approach.

This example addresses only one aspect of fuel damage, missing rods. Given the many other aspects of fuel damage makes it even clearer that a characteristics-based damaged fuel definition in the CoC backed by extensive calculations in the SAR or FSAR is not practical, and that a performance-based approach that allows evaluations or analysis by the user on a case-by-case basis would be the most effective implementation of this ISG.

We urge the NRC to provide guidance on this topic in the final version of this ISG for the benefit of all users, so that all the work that has been put into the technical basis for this ISG can fulfill its maximum potential in the practical applications.

SFST Response - There are many types of assembly defects that may or may not be severe enough to classify the assembly as damaged. They are too numerous to individually consider in the ISG. The ISG indicates the steps that one must address to classify an assembly with a certain type of defect as damaged or undamaged. One step is to assure that all system functions are met. How the applicant shows the system function is met is the applicant's responsibility. SFST staff recommends that the applicant meet with the appropriate reviewer to discuss the methodology prior to the SAR submittal.

Comment 3: Section 1.3 of the Appendix (Lines 414 through 425) lists incipient damage as part of the default definition of damaged fuel. However, incipient damage is not mentioned anywhere in the main part of the ISG, neither it is discussed in the ANSI N14.33-2005 referenced as the basis for this appendix. It is therefore recommended to provide clarification on the relevance and consideration of incipient damage.

SFST Response - The section dealing with incipient defects has been removed. See Commenter #3, comment 21.

Commenter 3

COMMENT NO.	PAGE	LINE	CURRENT WORDING	PROPOSED WORDING	TECHNICAL BASIS	SFST RESPONSE
1	All	102, 103, 120, 138, 149, 156, 166, 170, 173, 255, 309	Functions	Fuel-specific or system-related functions	The terms “functions,” “fuel-specific and system-related functions,” “fuel-specific and system-related regulations,” “fuel-specific or system-related regulatory functions,” and “regulatory functions” are used inconsistently throughout the ISG and should be used consistently according to the definitions.	Done.
2	Cover letter, p. 1	1	Spent Fuel Project Office,	Division of Spent Fuel Storage and Transportation,	Administrative	Done.
3	1	12	“auguments”	“arguments”	Editorial	Done.
4	2	102	“…function.”	Add the following sentence after the existing definition: “Damaged fuel must be stored in a damaged fuel can or acceptable alternative for storage and/or transportation based on a	Damaged fuel may be able to be handled by normal means and, therefore, may not require use of a damaged fuel container for either functionality or retrievability. One acceptable alternative already licensed by NRC is suggested to be included later in the ISG under Comment 13.	Rejected. Canning is a remediation for damaged fuel, not part of the definition. Depending on whether we are dealing with storage or transportation, other types of remediation might be possible. Canning is sufficient but not always necessary.

COMMENT NO.	PAGE	LINE	CURRENT WORDING	PROPOSED WORDING	TECHNICAL BASIS	SFST RESPONSE
				functional evaluation."		
5	3	106	"…permit the release of gas…"	Add "particulate fuel matter and/or" between "of" and "gas"	Breached spent fuel rods include grossly breached spent fuel rods per Definition 6.	See commenter #1, comment #3.
6	3	107	"pinhole breach"	"pinhole leak"	Editorial for consistency with Definition 5	Done.
7	3	111-112	"…,and therefore…operations."	Delete	This part of the definition is not necessary. The rest of the definition is sufficient to define the term.	Reject. Subject sentence provides clarification.
8	3	115	"SNF"	"spent fuel"	Editorial for consistency with Definition 4	Done.
9	3	128-129	Items (a) and (b)	Modify item (a) and delete item (b) referring to the damaged fuel can having to be retrievable.	There is no regulatory requirement for a damaged fuel can to be removable or retrievable. Only the fuel is required to be retrievable per §72.122 (l). For example, fuel in pieces will require removal from the damaged fuel can using special tools or other means whether the damaged fuel can is located in the canister or removed from the canister.	See Commenter #1, comment #6.

COMMENT NO.	PAGE	LINE	CURRENT WORDING	PROPOSED WORDING	TECHNICAL BASIS	SFST RESPONSE
10	3	141	“Appendix A”	“appendix”	Editorial for consistency with Appendix naming	Done.
11	4	157	“(i.e., irradiation..”	Delete “irradiation” from this part of the sentence	The functions that are the subject of this ISG do not include the irradiation period. We recognize that irradiation affects material properties, so we agree the use of “irradiation” is appropriate in line 156.	Done.
12	4	185	“…do not want perform…”	“…do not want to perform…”	Editorial.	Done.
14	5	208	“…removal from storage.”	“…removal from storage.”“	Editorial. Close quotes at the end of the regulation citation.	Done.

COMMENT NO.	PAGE	LINE	CURRENT WORDING	PROPOSED WORDING	TECHNICAL BASIS	SFST RESPONSE
15	5	231	"cladding."	After "cladding" add "In cases where reactor operating records cannot determine the classification of rods or assemblies, then fuel inspection campaign results (UT, sipping, etc.) or reasoned engineering arguments may be used to classify rods and assemblies as unbreached or breached."	To provide necessary flexibility.	Change has been made to indicate UT, sipping, can be used to distinguish breached and unbreached cladding. These techniques cannot be used to distinguish gross breaches.
16	6	265	"or in an acceptable alternative."	After "alternative" add "which may include mesh screens at the top and bottom of the fuel basket cells suitable to contain fuel particulates for damaged fuel that can be handled by normal means."	Some damaged fuel assemblies are capable of being handled by normal means and do not need to be placed in a damaged fuel can to meet functional requirements and permit retrievability. Alternatives such as these have already been approved by the NRC.	Reject. The alternatives need to be considered on a case by case basis. What is an acceptable alternative is subject to discussion.

COMMENT NO.	PAGE	LINE	CURRENT WORDING	PROPOSED WORDING	TECHNICAL BASIS	SFST RESPONSE
17	7	285	"will"	"may"	One cannot say with certainty that other breached rods will necessarily become grossly breached in this scenario.	Reject. We can say with certainty.
18	7	Flow Chart	a) Block entitled "SNF for specific application" b) Block entitled "Intact SNF" c) Bottom diamond that addresses functions.	a) Delete parenthetical group or add "assembly defects" b) "Unbreached SNF" c) Add "with or without assembly defects" after "functions."	Not all assemblies without cladding penetrations are Intact SNF (i.e., if they have structural defects). Intact SNF, per Definition 7, meets all functional requirements and is not breached. To ask the "functional" question of fuel already deemed to be intact SNF, as the flow chart currently directs, contradicts the definition. Therefore, the flow chart needs to be revised as suggested in items 'a' and 'b'. Comment 'c' ensures both unbreached and breached fuel will include assembly defects in any functional analysis.	See commenter #1 comment 12.
19	9	350-351	"This includes…."	Delete this sentence.	Referring to the applicable regulations is sufficient. Licensees' QA programs will determine the exact records to be maintained. Licensees typically do not maintain all electronic files generated during the inspections, only the final report.	Done.

COMMENT NO.	PAGE	LINE	CURRENT WORDING	PROPOSED WORDING	TECHNICAL BASIS	SFST RESPONSE
20	9	372-376	None	The “ISSUE” section of ISG-22 needs to be revised to define intact fuel consistently with ISG-1, Rev. 2.	ISG-22, in its ISSUE Section, first sentence states: “Under the current guidance in ISG-1, Revision 1, “Damaged Fuel,” the definition of intact fuel includes fuel rods containing no cladding defects greater than pinhole leaks or hairline cracks.” The definition of Intact Fuel in draft ISG-1, Rev. 2 defines fuel rods with pinholes or hairline cracks as breached, not intact. This is not consistent with the statement in ISG-22.	A sentence has been added to the Recommendation section to reflect the necessity for a change in ISG-22 so it is consistent with the new definition.
21	10	414-428	Section 1.3	Delete this section of the default definition of damaged fuel in its entirety.	Incipient damage is a term too subjective to implement or enforce. There is no engineering basis for presumptively classifying a fuel assembly as damaged simply because it may have been located adjacent to a fuel assembly with a gross rod rupture or because it has had a breached rod re-constituted. Incipient damage is not discussed anywhere else in the ISG nor is it a term defined or addressed in ANSI N14.33.	The section on incipient damage has been removed due to an operational impossibility of implementing in a timely fashion. The dose to implement may violate ALARA.

COMMENT NO.	PAGE	LINE	CURRENT WORDING	PROPOSED WORDING	TECHNICAL BASIS	SFST RESPONSE
22	10	397-404	a) “there” b) Section numbers 1.1.1 and 1.1.2	a) “There” b) Change to Sections 1.2 and 1.3 and revise other section numbers accordingly.	a) Editorial b) The information in Sections 1.1.1 and 1.1.2 has the same weighting as the information in Section 1.1.	Done.
23	11	444	“D.C,,”	“D.C.,”	Editorial	Done.

Comment 24: As a general comment, industry is concerned about the implementation of ISG-1, Revision 2. Interim Staff Guidance documents are revisions to NRC staff review guidance. The definitions of damaged fuel that must be complied with by licensees are contained in the individual Certificates-of-Compliance (CoC). Therefore, the CoCs would have to be amended to change the definition of damaged fuel with which licensees must comply. The guidance in ISG-1 may be implemented in whole, in part, or not at all by the CoC holders that have CoCs already containing definitions for intact and damaged fuel that the NRC has reviewed and approved and, therefore, found to adequately protect public health and safety.

Industry is also concerned that modifying the definition of damaged fuel in transportation CoCs for dual purpose spent fuel storage and transportation systems may render previously loaded canisters untransportable. If the Part 71 CoC definition of damaged fuel is changed after the time of original cask/canister loading, fuel assemblies previously classified as intact and not loaded in a damaged fuel can could possibly be considered damaged under the newer version of the Part 71 CoC in effect at the time of shipment, making the canister non-transportable.

This would require returning the bolted cask or welded canister to the plant spent fuel pool, opening it, and re-loading the cask/canister, activities which require heavy load movements and additional personnel radiation exposure. This is a potential unintended consequence of this ISG revision and is clearly not a desirable outcome. Furthermore, several decommissioned plants that have dual-purpose canisters loaded at their ISFSIs no longer have spent fuel pools (e.g., Big Rock Point, Rancho Seco, Trojan, Yankee Rowe, and Maine Yankee).

To address this situation, we recommend that any CoC holder who chooses to modify their transportation CoC to adopt the revised guidance in ISG-1, be permitted to “grandfather” casks and canisters loaded prior to the new definition becoming effective. This can be accomplished with appropriate language in the Part 71 CoCs. We recommend that SFST modify their licensing procedures to recognize the need for grandfathering.

SFST Response - No grandfathering is necessary. All fuel currently loaded in casks as undamaged under ISG-1, Revision 1 guidance would remain undamaged under Revision 2 guidance. If a dual-purpose cask was approved for storage only, there is no implied consent that it is transportable as loaded until a transport license is requested and approved. In the SAR for the transport license, it would have to be shown that all the fuel content meets applicable transport 10 CFR 71 regulations. If fuel, classified as intact for storage, does not allow all transport regulations to be met, it would have to be reclassified as damaged under Revision 1 or Revision 2.