NUREG-1520, "Standard Review Plan [SRP] for License Applications for Fuel Cycle Facilities," has been revised to improve clarity of the text, reduce redundancies, and assure that statutory, regulatory, and guidance document references are accurate and up to date. On June 5, 2014 (79 FR 32579), the NRC published the draft SRP and provided the public the opportunity to provide comments until November 3, 2014. This document summarizes the comments received from the public and the responses from the NRC staff.

Disposition of the Comments Received on Draft NUREG-1520, Revision 2

U.S. Nuclear Regulatory Commission

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Acronyms

ANS	American Nuclear Society
ANSI	American National Standards Institute
CFR	*Code of Federal Regulations*
CM	Configuration Management
DI&C	Digital Instrumentation and Control Systems
FRN	*Federal Register* Notice
ISA	Integrated Safety Analysis
MC&A	Material Control and Accounting
NCS	Nuclear Criticality Safety
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
QA	Quality Assurances
SRP	Standard Review Plan
SSC	Structure, System, and Component

General Comments

ID	Source	Comment/Question	Resolution
G-1	NEI	Issuance of Revision 2 should be delayed. Industry appreciates the fact that there is a never a perfect time to update the Standard Review Plan, i.e., NUREG-1520. That being said, one could question whether an update should be attempted until at least 2017 based on the following facts. Specifically: 1) there are no applications for a new NRC-licensed fuel facility for the foreseeable future and the last 3 facilities licensed are not yet under construction; 2) relevant significant rulemakings are underway, i.e., Parts 73 and 74; 3) relevant guidance is under development, e.g., dermal and ocular quantitative exposure standards; and 4) unresolved regulatory issues remain, e.g., the draft generic letter on treatment of natural phenomena hazards in the facility-specific integrated safety analyses (ISA).	The Standard Review Plan (SRP) is a living document. The Nuclear Regulatory Commission (NRC) staff recognizes the importance of improving the understanding of the review process. The staff considers that is necessary to constantly improve guidance based on lessons learned from previous licensing actions as well as incorporating guidance provided in Interim Staff Guidance (ISG). Therefore, the SRP will continue to be revised in the future as the staff deems appropriate.
G-2	NEI	New Chapters 12 and 13, Material Control & Accounting and Physical Security: Industry recognizes that NRC has included draft guidance based on relatively recent licensing experience; however, given the status and interdependency of the Parts 73 and 74 rulemakings, it seems premature to include draft guidance in NUREG-1520 until these rulemakings are complete. Further, adding such guidance now would potentially result in the guidance being "out of synch" with any new or revised future requirements. As a result, NRC should consider not adding these new chapters until the respective rulemakings are complete.	These chapters were added to the SRP as a result of lessons learned from previous licensing actions. The guidance provided in these chapters is minimal and high level. It assists the staff during the acceptance review process, thus ensuring the completion of licensing submittals. The chapters also direct the staff to other guidance document available to perform detailed review on these technical areas.
G-3	NEI	Dermal/Ocular Quantitative Exposure Standard for Workers: Given the fact that, while NRC has stated its position on this matter in a September 2014 letter, the draft guidance document for stakeholder comment is not expected until winter 2015. Therefore, inclusion of any text that reflects an NRC position on this matter not contained in a final NRC guidance document is premature, inefficient, and should be incorporated into a subsequent revision of NUREG-1520.	Revision 2 of NUREG-1520 does not include new information on the subject of dermal or ocular exposure standards for workers. No change is warrant in response of this comment.

G-4	NEI	Soluble Uranium Intake Values: This section should be modified to be consistent with the current draft but near final Interim Staff Guidance on Acute Uranium Exposure Standards issued for in September for public comment by December 1, 2014. We believe our position is consistent with NRC-industry discussions during the October 2013 public meeting. We are pleased that this issue is being brought to closure in an implementable manner that is acceptable to both NRC and industry.	The staff is currently working on finalizing the guidance that will address this issue. The ISG is not expected to be finalized for several months. Therefore, the addition of this guidance into NUREG-1520 will be considered in future revisions.

Abstract

ID	Source	Comment/Question	Resolution
A-1	NRC	Page iii, Line 16 – If you are going to list the chapter titles, you should include the new chapters added to the document.	This section was revised to include Material Control and Accounting and Physical Protection to the list of chapters in the SRP.

Glossary

ID	Source	Comment/Question	Resolution
GL-1	NEI	"Analytical limit" - This definition is not consistent with the "safety limit" definition. The safety limit definition implies that the two terms are interchangeable.	The NRC staff agrees that the two comments are inconsistent. The definition of “analytical limit” is inappropriate in the context of fuel facilities and is not used in the NUREG. This definition has been deleted.
GL-2	NEI	"Credible abnormal condition" **-** This term does not seem to be used consistently in the Draft NUREG-1520, Revision 2.	The term “credible abnormal condition” is universally used in criticality safety and a direct quote from both ANS-8.1 and 10 CFR 70.61(d). No change is warrant in response of this comment.
GL-3	NEI	"Degraded" - Typically, industry only uses this term when the safety margin has been reduced not when its availability or	Reducing the reliability of a control can impact whether the performance requirements or double

		reliability has been negatively changed; therefore, it is unclear whether NRC is attempting to tie this condition to section 70.72 and the ISA Summary.	contingency principle are met. The NRC staff considers this to constitute degradation. No change is warrant in response of this comment.
GL-4	NEI	"Independent" - Industry does not generally consider interdependent probability of failure as an aspect of independent. No common mode failure is the key aspect of independence.	What follows “and” is merely intended as a further explanation of what is meant by common-mode failure. The definition was revised to replace “and” with “i.e.”
GL-5	NEI	"Lost" - Industry believes this term is synonymous with "failed" and confuses the concept of "unavailable" with lost and failed. The terms should be defined in a manner consistent with the rule, i.e., IROFS must be available and reliable.	The NRC staff considers “lost” and “failed” to be synonymous. IROFS are required to be “available and reliable” “when needed and in the context of the performance requirements.” The definition is consistent with this understanding. No change is warrant as a response of this comment.
GL-6	NEI	"Safety limit" (revised) **-** The revised definition does not consider the chemical aspects of the term "reactivity," i.e., the rate at which a chemical substance tends to undergo a chemical reaction. The reference to an "analytical limit" as equivalent to "safety limit" will confuse NRC inspectors who visit facilities where the analytical limit refers to the limit established to ensure that measurement uncertainty is considered when establishing set points that protect the safety limit or other limits with arbitrary safety margins.	The term “safety limit” is as used in criticality safety. No change is warrant as a response of this comment.
Additional Changes to the Glossary			
N/A	NRC	Definitions for validation (criticality code), and Verification (criticality code) have been included in the glossary, as applied in NCS.	These definitions were added to address comment 5-9 below.

Introduction

ID	Source	Comment/Question	Resolution
Int-1	NRC	Page 1, Line 33 – The MC&A guidance is now provided in the MC&A chapter. It is no longer necessary to hide it in the	The paragraph was revised to remove reference to guidance associated to MC&A.

		Introduction. The MC&A guidance should be deleted from the introduction.	
Int-2	NRC	Pages 5, Line 28 – Additional requirements for approving an application are specified in 10 CFR 70.66. Section 70.66 should be cited also.	The second paragraph under Acceptance Criteria has been revised to include reference to 10 CFR 70.66.

Chapter 1, General Information

ID	Source	Comment/Question	Resolution
1-1	NRC	Page 1-7, Line 36 – Where is the guidance regarding the requirement in 10 CFR 70.22(n) for enrichment facility applications to include liability insurance? Guidance is needed on what liability insurance the NRC considers acceptable.	This section was revised to include that per 10 CFR 140.13(b), uranium enrichment facilities must have, and maintain, offsite liability insurance. Proof of insurance must occur prior to the issuance of the license. 10 CFR 140.15 provides the methods and instruments where applicants and licensees prove that they have the necessary financial protection.
1-2	NRC	Page 1-7, Line 41 – The guidance states that the description should include “sufficient details.” What does the NRC staff consider to be sufficient details? Examples of descriptions that the NRC staff has found sufficient in previous applications should be provided.	This section was revised to provide examples of description of financial qualifications to demonstrate compliance with 10 CFR 70.22(a)(8) and 10 CFR 70.23(a)(5).

Chapter 3, Integrated Safety Analysis (ISA) and ISA Summary

ID	Source	Comment/Question	Resolution
3-1	NRC	Page 3-3, Line 5 – The Licensing Project Manager (PM) is responsible for coordinating and consolidating all of the detailed reviews into a final evaluation report. Therefore, the Licensing PM should be listed as a secondary reviewer in each chapter if not already listed as the primary reviewer.	The responsibility of the Licensing Project Manager is now listed in all chapters for consistency.
3-2	NRC	DI&C-ISG-07, "Digital Instrumentation and Controls" should be	Per SRM-12-0091, “Completeness and Quality

		used by staff reviews for reviewing digital instrumentation and control aspects of safety applications in fuel cycle facilities. This ISG reference should be incorporated appropriately in Chapter 3 and Chapter 11 to allow technical reviewers to use this guidance as needed.	of Integrated Safety Analyses," the staff was limited with the types of changes that could be performed to Chapter 3. This comment will be considered in future revisions to the SRP.
3-3	NRC	FCSS-ISG-04, Rev. 0, "Clarification of Baseline Design Criteria," Specific Criteria Guidance, Items 7, 8 and 10 should be incorporated into the section 3.4.3.2 (4).d of NUREG 1520, Chapter 3 to provide guidance to technical reviewers to evaluate acceptance criteria in the context of baseline design criteria.	See response to comment 3-2.
3-4	NRC	Section 3.4.3 of Chapter 3, Regulatory Acceptance Criteria is very broad and leaves information open to interpretation and does not provide specific guidance for performing technical reviews in the electrical power, digital instrumentation and controls and mechanical design (e.g., HVAC) areas.	See response to comment 3-2.
3-5	NRC	The Part 70 regulations do not require adherence to any particular industry standards or NRC regulatory guidance containing specific design criteria in the above areas. However, to support the evaluation of the design, implementation and maintenance aspects of the engineered and administrative controls (IROFS) in safety systems and to ensure that they are available and reliable when needed to meet the performance requirements, Chapter 3, sections 3.4.3.2(d) and 3.4.3.2(6) could include sub-topics to address appropriate acceptance criteria describing what are considered to be (a) adequate provisions of for reliable utility supplies,(b) adequate use of redundant, independent, and/ or diverse controls, (c) adequate criteria for periodic testing of safety components, (d) adequate design features ensuring that IROFS are protected from faults occurring in adjacent or associated non-IROFS equipment, (e) criteria to ensure adequate electrical and physical separation between safety and non-safety systems, and potentially other key design criteria that are used to ensure the reliability and availability of IROFS. The use of generally accepted codes and standards and applicable NRC regulatory guidance could be	See response to comment 3-2.

		listed as examples for the reviewer to consider while evaluating proposed IROFS designs in the licensee's application. (e.g., RG 1.75, IEEE 485, etc.) Note that the DI&C ISG-07 must be referenced to point to the details for digital I&C related guidance.	
3-6	NRC	The Chapter 3 acceptance criteria section should include guidance for the evaluation of defense-in-depth practices in the above areas.	See response to comment 3-2.
3-7	NEI	Information in Integrated Safety Analyses/Summary and not License Application: As industry commented during the September 2014 public meeting, there are many examples where the draft NUREG states that certain information, which is typically contained in the onsite ISA, must now be contained in the license application. This approach is inefficient, not risk-informed and unnecessarily resource intensive for the applicant or licensee undergoing license renewal or amendment. As NRC is aware, the ISA is an evolving process and routinely updated to reflect current facility operations; therefore, the most up to date information is readily available for NRC review onsite. Therefore, we encourage NRC to modify the Draft NUREG to allow for most information to be contained in the on-site ISA and not submitted in the license application.	Although the NRC staff considers that the changes made to Revision 2 of NUREG-1520 were editorial in nature, we have determined that the staff's proposed changes to the chapter will not be implemented to prevent misunderstanding. Revision 2 of the SRP will include the original guidance as written in in Revision 1; except for Sections 3.5.1, 3.5.2, and 3.6. These sections will include the same standardized guidance that was added to similar sections in other chapters as a result of this revision. This will ensure consistency through the SRP and will assist staff in performing acceptance reviews and documenting safety evaluations reports. Note: the standardized guidance in Sections 3.5.1, 3.5.2, and 3.6. remain the same as published in draft Revision 2 of NUREG-1520. No further changes were made. The staff recognizes that further guidance and clarification in performing ISA is needed. This comment will be considered in future revisions to the SRP.
3-8	NEI	Draft Chapter 3, ISA: Despite Commission direction to not modify existing ISA related guidance until such time that the final American Nuclear Society's ISA standard is issued, the	See response to comment 3-7.

		Draft revisions to Chapter 3 are relatively extensive, do not appear to be fully warranted or explained, and extend beyond "administrative" changes as characterized in the document, related FRN and by NRC staff during the September 2014 public meeting. Industry suggests that the current version of Chapter 3 be maintained until a Draft Revision 3 of NUREG-1520 is performed.	
3-9	NEI	Section 2: NRC should clarify the phrase, "all credible events." It is not clear whether it is intended to mean "all credible bounding sequences" or all credible events that require protection to prevent high or intermediate consequence events.	See response to comment 3-7.
3-10	NEI	Section 3.3.2, "Review Interfaces": Perhaps chapter 4, Radiation Protection, should be included in the list of SRP sections that should be interfaced with this section.	See response to comment 3-7.
3-11	NEI	Table 3.2: "criticality monitoring and alarms" is in the license application and typically not in the ISA Summary. Section 3.4.3.1, item (2)f: "procedures" are available for review on site and should not need to be sent to NRC as implied by this sentence.	See response to comment 3-7.
3-12	NEI	Section 3.4.3.1, item (3)a.iv.: "safety margin" information is not contained in the ISA summary as implied: This information is reviewed on site. Since safety margin (subcritical margin) is defined in the license application it is not obvious why safety margins of process parameters also need to be included. This comment is also applicable to item (b)(iii)	See response to comment 3-7.
3-13	NEI	Section 3.4.3.2, item 1(c): NRC should ensure that its expectation with regard to treatment of natural phenomena hazards in the ISA is consistent with the final Generic Letter to be issued in winter 2015 for implementation later next year.	See response to comment 3-7.
3-14	NEI	Section 3.4.3.2, item (3)(c)(i) and item (ii): It is vitally important to not confuse the terms accidents and accident sequences. This section also seems internally inconsistent with regard how accident sequences are defined and characterized.	See response to comment 3-7.
3-15	NEI	Section 3.4.3.2, item (4)(a): "credible" - The definitions in this section appear to differ from ANSI 8.1, although they are	Footnote 1 to Chapter 5 explains the different uses of the word “credible.” The Footnote

		worded the same. One could conclude that all combinations of errors that could occur in 1M years have to be proven to be subcritical. It is unclear whether this is what NRC intended.	applies to all of Chapter 5 and its Appendices. The definitions in Chapter 3 apply to performance of the ISA. The footnote on page 5-1 has been revised to explicitly state that this definition of credible applies to the appendices as well. Also, see resolution to comment 3-7.
3-16	NEI	Section 3.4.3.2, item (4)(a)(i): It is not possible to list all credible events.	See response to comment 3-7.
3-17	NEI	Section 3.4.3.2, item (4)(a)(ii): It is not possible to compare quantitative consequences for dermal and ocular events to the consequence levels in Section 70.61. It is not done for many inhalation hazards in the ISA Summary, rather such information is onsite. NRC has indicated that they believe an ISG clarifying this expectation will be ready early 2015. This section should be consistent with the ISG and the revised NUREG-1520 should not be issued until the dermal ocular issue has been resolved.	See response to comment 3-7.
3-18	NEI	Section 3.4.3.2, item (4)(c): Requirements for criticality monitoring and alarms in section 70.24 are included in the license application and for many licensees have not been in the ISA Summary. Licensees and the staff should be permitted latitude on this item so that redundant information is not required to be submitted to the agency.	See response to comment 3-7.
3-19	NEI	Section 3.4.3.2, footnote 4 in this section: "Nexus to processing." NRC's intent with the use of this term is not clear given the long standing use of the term "co-mingled". It is unclear why the term co-mingled is not used? Further, it is unclear whether use of the word "nexus" represents a fundamental change in NRC's approach to chemicals, and if so, it is unclear whether this approach has been coordinated with the Occupational Safety and Hazards Agency.	See response to comment 3-7.
3-20	NEI	Section 3.4.3.2, item 7)(a): "for each exposure pathway." There is no mechanism to provide quantitative standards for the dermal or ocular exposure pathway or for many ingestion	See response to comment 3-7.

		sequences. This issue is directly related to the ongoing, unsettled, issue of quantitative exposure standards for dermal and ocular exposure with no clear path forward at this time based on the NRC's September 2014 response letter to industry.	
3-21	NEI	Section 3.4.3.2, item (7)(d): "mild transient health effects." NRC needs to define or, at minimum, provide examples of mild transient and serious long term health effects since this has been an area of controversy and confusion for essentially all NRC categories of licensees.	See response to comment 3-7.
3-22	NEI	Section 3.4.3.2, item (9)(f): "10-5 per event per year." The frequency does not add up to an event every 100 years. With such a small fleet of licensees ("10 operating), we have about 1,000 operating years during this time which means that we can only have 100 accident sequences that meet this minimum definition of "highly unlikely." Clarification of NRC's intent is sought. Also, "credible" when used in criticality sequencing does not have the same meaning - industry suggests NRC use the "credible" footnote in Chapter 5 wherever possible for clarity and consistency.	This definition should be evaluated for ISA only; this does not apply to Chapter 5 (as noted in Footnote 1 of Chapter 5). Also, see response to comment 3-7.
3-23	NEI	Appendix A and "General Types of Accident Sequences". This discussion can be easily confused with the definition of "Types of Accident Sequences" defined in NUREG 3.74 "new types of accident sequences can be defined as accident sequences that result from a hazard that has not previously been described in the ISA Summary as having consequences that could exceed the performance requirements unless mitigated or prevented. One could infer from this section that the NRC wants pre-approval for a licensee to replace an administrative IROFS with an engineered IROFS if it will be used with a different set of IROFS than used in other accident sequences listed in the ISA Summary. Also, pre-approval would be needed to make a change with the criticality safety IROFS (loss of containment protection) for a chemical safety accident sequence if not already used in a sequence contained in the ISA Summary. It is unclear whether these pre-approvals is what NRC intended. We	See response to comment 3-7.

		suggest not. Please consider the following re-write of this section *[Changes in italics].* • *"General accident sequences differ if they consist of a different set of IROFS failures.* The ISA summary need not list as a *separate accident sequence, every conceivable permutation of a family of accident sequences.* Several processes, or different nodes of the same process each using a set of IROFS that is functionally of the same type (e.g., having the same mechanical, physical, and/or electrical principle of operation) and fall in the same categories, can be grouped as a single bounding accident sequence in the ISA summary provided that the following conditions are met: *i.* The initiating IROFS failures or events have the same effect on the system. *ii.* They all consist of failures of the same IROFS or system of IROFS. *iii.* They all result in violation of the safety limit on the same parameter. *iv.* They all result in the same type and severity categories of consequences."	

Chapter 4, Radiation Protection

ID	Source	Comment/Question	Resolution
4-1	NEI	Many of the documents referenced in 4.4.2.2. are very outdated and should be updated or deleted.	The NRC staff reviewed the references and all are current and applicable to the regulations in 10 CFR 20. It is acknowledged that some regulatory guides are dated but the NRC has a program to review and update its regulatory guides should they become non relevant.

Chapter 5, Nuclear Criticality Safety

ID	Source	Comment/Question	Resolution
5-1	NRC	Page 5-1, Line 33 – The guidance only references the requirement in 70.22(a)(8) to describe procedures. However, the requirements in 70.22(a)(6) to describe the qualifications of workers, and 70.22(a)(7) to describe the equipment and facilities are also very important to the areas of review. All 3 of the requirements should be cited.	10 CFR 70.22(a)(8) is mentioned only as a basis for requiring an NCS Program. There is no need to address the other parts of 70.22. This section was revised to clarify the description of this basis.
5-2	NRC	Page 5-4, Line 14 – The title of Section 70.72 listed in the NUREG is incorrect. The title of Section 70.72 is "Facility Changes and Change Process."	The title of 10 CFR 70.72 has been corrected.
5-3	NRC	Page 5-7, Line 48 – The acceptance criteria for responding to a criticality alarm states that the applicant has an emergency plan or satisfies the alternative requirements in 10 CFR 70.22(i)(1)(i). This guidance is unacceptable. The alternative requirement in 70.22(i)1(i) is an evaluation of the dose to a member of the public offsite. There is no consideration of the dose to a worker onsite. The emergency response requirements in 70.24(a)(3) and 70.24(b)(2) are imposed to protect workers onsite and must be addressed whether an emergency plan is required or not. The acceptance criteria referring to the evaluation in 70.22(i)(1)(i) should be deleted.	The staff considers that guidance on how to review the criticality portion of applicants' emergency plans is appropriate. The staff reviewed Chapter 5 and made changes as needed to ensure all the regulatory requirements for criticality response have been appropriately addressed (e.g. Section 5.4.3.1.3, "Emergency Planning and Response).
5-4	NRC	Page 5-26, Line 40 – Same comment as Item 9 above. The guidance referring to the evaluation in 70.22(i)(1)(i) should be deleted.	See response to Comment 5-3.
5-5	NRC	Page 5-27, Line 3 - Same comment as Item 9 above. The guidance referring to the evaluation in 70.22(i)(1)(i) should be deleted.	See response to Comment 5-3.
5-6	NRC	Page 5-30, Line 8 - Same comment as Item 9 above. The emergency response requirements in 70.24(a)(3) and 70.24(b)(2) must be addressed whether an emergency plan is required or not.	See response to Comment 5-3.
5-7	NEI	Draft Chapter 5, Nuclear Criticality Safety: Industry notes that there is an excessive level of detail in Chapter 5 with regard to what information must be submitted by the applicant or licensee	The staff considers that the overall scope of Chapter 5 was not changed. An additional ISG and an example were added as appendices.

		that is not commensurate with other chapters, e.g., Chapter 3 on the Integrated Safety Analysis. Industry suggests that a consistent approach be taken across all guidance chapters regardless of the subject matter.	No change is warrant as a response of this comment.
5-8	NEI	ANSI-ANS 8.1 published in 2014 should be added as a reference or replace the existing reference to the 1998 version of ANS 8.1.	The 2010 version of Regulatory Guide 3.71 endorsed ANSI/ANS-8.1-1998. While a new version of the standard was issued in 2014, the NRC has not yet formally endorsed it. No change is warrant in response of this comment.
5-9	NEI	Section 5.3, item A.4: "validation report." This term needs clarification since it is unclear whether it is referring to the computer code validation report. Same comment for item B.4.	Chapter 5 was revised to change “validation report” to “criticality code validation report” where appropriate (e.g. Section 5.3 items A(4) and B(4)).
5-10	NEI	Section 5.4.3.1.1.(2): If a licensee commits to an industry standard, it should be adequate that such information is retained on site and not included in the license application.	The scope of a licensee’s commitments should be clear and unambiguous. There should be sufficient detail to support reasonable assurance that a licensee’s implementation of standards will meet regulatory requirements. This regulatory position has not changed. No change is warrant in response of this comment.
5-11	NEI	Section 5.4.3.1.2 (2) re: Criticality Accident Alarm System (CAAS): Many of the CAAS details should be in technical manuals available on site and not in the license application. The commitment to meet the criteria listed in the regulation and ANSI standard should be sufficient in a license application.	A commitment to follow the rule is not necessary. A commitment to follow a standard may not be sufficient; additional detail describing how a licensee plans to implement the requirements in the standard may be necessary. The CAAS is required to be described in the ISA Summary as well as the license application, by 10 CFR Part 70. No change is warrant as a response of this comment.
5-12	NEI	Section 5.4.3.1.3.(3): This item appears to conflict with the requirement listed in 70.24(b)(1) which states: "provide the means for quickly identifying the individuals who have received doses of 10 rads or more." This apparent allowance to have fixed dosimeters or personnel accident dosimeters would cause	Item 3 to Section 5.4.3.1.3 was revised to remove reference to fixed accident dosimetry, as this does not contribute to meeting 70.24(b)(1).

		an unintended violation of the aforementioned requirement and current approved NRC programs.	
5-13	NEI	Section 5.4.3.1.4., item (1)(d): The validation report discussed earlier should have a direct tie to this item to reduce ambiguity. Item (2): It is unclear why it is necessary to include subcriticality information in the license application since it is normally kept on site for inspection and the licensee commits to following it and informing NRC of changes to it. Item (4), paragraph 4: "no credible accident sequences" should be footnoted as to not mean 10^{-6} events.	See response to comment 5-9. The staff considers that subcriticality information needs to be included because 10 CFR 70.61(d) requires use of an approved margin of subcriticality. The range over which this margin is valid (the area of applicability) needs to be included for the same reason. This section was revised to clarify in Section 5.4.3.1.4(1) that a licensee can use “one or more” of the four methods listed.
5-14	NEI	Appendix 5-A: It contains a lot of redundant text and excessive detail which should be deleted for brevity. The same comment applies to other chapters and sections.	The Staff considers this comment is too broad to be addressed at this time. The staff will consider it in future revisions to the SRP. No change is warrant as a response of this comment.
5-15	NEI	Section 5.4.3.1.5, item (2)(a): Consistent expectations need to be established. The origin of the term "credible abnormal events" did not include 10-6 definition of credible. Item (e): "Audits and assessments" - these terms are not used consistently or defined in the draft NUREG-1520; therefore, clarification is needed. Item (5): This item implies that two limits must be established for each controlled parameter, operating limit and safety limit. It is unclear whether this is what NRC intended. Also, items (6) and (7) seem redundant.	The term “credible abnormal events” is universally used and well-understood; therefore, no change is warrant at this time. Given differences between facilities, consistent terminology on audits and assessments is challenging. However, this section was revised to make some clarifications on this topic. It is not the intent that a separate operating limit is needed. Licensees should have sufficient margin to ensure safety limits are not transgressed, with an appropriate degree of assurance. This section was revised to make this clarification. Also, Section 5.4.3.1.7.2 was also revised for consistency. The staff agrees that criterion (7) is largely redundant and has been deleted.
5-16	NEI	Section 5.4.3.1.6 - Item (2)(b): NRC should consider using term	See response to Comment 5-15.

		"assessment" or "appraisals" which is a more accurate description of this program review. Audits imply compliance and assessments usually determine how well the program is functioning overall. NRC should clarify its expectation.	
5-17	NEI	Section 5.4.3.1.7 - Items (3) and(4): Most of the language in these items is a subset of ANSI 8.24 and it seems unnecessary to duplicate here when a simple reference would suffice.	As stated in response to Comment 5-10, additional detail beyond a mere commitment to a standard is often needed. However, information that merely restates criteria from ANSI 8.24 and adds no additional value has been deleted. Duplicative information has also been deleted.
5-18	NEI	Section 5.4.3.1.7.1.(A)(1) - The level of detail seems excessive for a license application and it is maintained onsite for NRC review.	The staff considers that licensee's margin of subcriticality is tied closely to its validation (see Appendix 5-B). This is required to be approved. No change is warrant in response of this comment.
5-19	NEI	Section 5.4.3.1.7.2. Item (1)(b): NRC should clarify which definition of "unlikely" is used here, e.g., 10^{-4}	The term "unlikely" is in the context of the double contingency principle. This (and the position with regard to "operating limits") has been clarified in a footnote 4 to this chapter.
5-20	NEI	Section 5.4.3.2.1. Item 6: NRC should clarify that not all double-contingency controls are IROFS, e.g., sole IROFS, although general conditions exist, e.g., 10% enrichment limit.	This point has been made elsewhere (Appendix A). Discussion about double contingency controls being IROFS has been removed.
5-21	NEI	Appendix A, "Introduction": The phrase "under normal and abnormal conditions" should be revised to say "credible, normal and abnormal conditions." "Credible" in this context is not the same as in Chapter 3, section 3.4.2. This is especially true when considering single IROFS failures. Most licensees cannot demonstrate two simultaneous/concurrent IROFS failures are not credible... .only highly unlikely events.	See response to Comment 5-15. No change to the terminology is warrant.
5-22	NEI	Appendix A, "Discussion": The text "provide for criticality control including adherence to the double contingency principle" is not consistent with ANSI-ANS 8.1 which states: "design should, in	Appendix A was revised to remove the definitions of "credible" in Chapter 3 in reference to criticality events evaluated for

		general, incorporate sufficient factors of safety to require at least two unlikely, independent, and concurrent changes in process conditions before a criticality accident is possible." We suggest NRC rely on the ANSI language. Otherwise, one could argue that no enrichment facility could be licensed as the only "change in process condition" required for accidental criticality is that the UF6 become moderated. Note the definition here does not invoke the "credible" aspect of these changes. Based on the construct of this definition, compliance does not require that "all processes must require two changes in process conditions before criticality is possible in order to implement the double contingency principle. Also, it's not clear that the 70.61(d) quote is correct in that only the second sentence in the quote could preclude situations where criticality could be permitted. Finally, last paragraph before item (a): This is a needed allowance (not requiring the consideration of multiple independent IROFS failures). However the definition of "credible" as repeated here does not support the allowance. This will confuse reviewers and licensees as it implies that the frequency for two independent IROFS failures must be a 10-6 event; whereas, at least three licensees have as a definition of highly unlikely as an index number of - (this is a qualitative {semi-quantitative} assessment which is two orders of magnitude or more less than how "credible" is defined here.	compliance with the subcriticality requirement of 10 CFR 70.61(d) and the double contingency principle (DCP) in 70.64(a)(9), consistent with the footnote on page 5-1. Consequently, the intent of the phrase involving multiple independent failures has been clarified, to indicate that compliance with the requirement to be subcritical under normal and credible abnormal conditions does not require going beyond what must be demonstrated to meet the DCP.
5-23	NEI	Appendix A, item (c): "credible conditions are subcritical." Again, credible as used here has not by most licensees been in the context as "credible" as far as dismissing accident sequences from being evaluated to demonstrate that they are at least "highly unlikely." Item (c) bullet 5: The regulation does not require that computer models be used to demonstrate subcriticality. This guidance could mislead reviewers/inspectors into expecting that licensees have a virtual plant of every "credible" configuration created in KENO or MCNP. Also, having a computer based calculation with the "model" outside of the area of applicability does not always constitute failure to meet 70.61 (d). In fact guidance is provided on how to	The footnote on page 5-1 of Chapter 5 was revised to indicate that the definition of “credible” applies to the chapter’s appendices as well. Also, see resolution to comment 3-22.

		extrapolate beyond the Area of Applicability. Item (c) bullet 6: An unanticipated credible condition does not necessarily constitute failure of 70.61 (d). Many such credible conditions are bounded by a safety analysis.	
5-24	NEI	Section entitled, "Relationship of 70.61(b) to (d)", 2nd paragraph: This ANSI-ANS 8.1 text for the term "credible" is different than defined in Chapter 3 of NUREG-1520. Also, 3rd paragraph: the term "Non-zero" indicates that "not credible" does not mean impossible, however it does not give good guidance on how large of a "non-zero" value or qualitative judgment is acceptable. NRC needs to clarify in the 4th paragraph, the sentence that begins with: "Thus, if a licensee..." Just because high consequence events (nuclear criticality) are highly unlikely and that an approved margin is used to establish limits and controls, does not mean that accidental nuclear criticality is "not credible" i.e. that all credible conditions (both normal and abnormal) are subcritical.. .depending on how "credible" is defined.	See response to Comment 5-23. Additional clarification has been made to Appendix 5-A to address this comment, consistent with the position stated above in response to Comments 5-22 and 5-23.
5-25	NEI	Section entitled, "Double Contingency Principle 70.64(a)(9)", paragraph 2, last sentence: NRC should state how or at least provide an example of how 70.64(a) allows for not having strict compliance with DCP if the ISA demonstrates that it is not relied on for safety or otherwise does not require adherence.	This section was revised to add examples of when compliance with the DCP in 10 CFR 70.64(a)(9).
5-26	NEI	Section entitled, "Changes in process conditions", bullet 5: NRC should state how it would list this siphon break (funnel break or air gap to preclude pumping instead of syphon) as an IROFS and how it would justify it in a hypothetical ISA summary as not being a sole IROFS. Also, the double contingency analysis included in appendix 5 page 5-c-7 (item GEO-04).. .does not list this single item in the example. Rather, it is doubled up with another IROFS.	Scenario GEO-04 in Appendix C has been revised to include only the siphon break, as an example of meeting the DCP with only one control.
5-27	NEI	Section that begins, "Some examples of control systems that would not meet Section 70.61(d) .....": We view the provided examples as not unlikely enough to occur concurrently... (not sufficiently independent perhaps); however, if "failure of multiple IROFS	"Control methods" is not sufficiently descriptive, and "scheme" has a negative connotation. The terms "control" and "control system" have been added to the Glossary.

		do not need to be evaluated within the spectrum of credible abnormal conditions," as stated on page 5-A-3, then something here or on page 5-A-3 needs clarification for internal consistency. Also, the use of control systems to describe administrative actions is confusing. Normally "control systems" is used to describe engineered controls. Consider using "control methods" or "control schemes".	
5-28	NEI	Appendix B, Introduction, sentence 3: We assume "actual conditions" means real plant conditions versus "expected" or computer predicted Keff values for modeled conditions. Further, it is unclear whether NRC intends that "bias" used here means the difference between critical conditions established by experiment compared to computer models of the same system.	The NRC staff understands that “actual conditions” means real physical plant conditions as opposed to computer-predicted k-eff values. The term “bias” is defined in the Glossary. No change is warrant in response of this comment.
5-29	NEI	Appendix B, Discussion, 1st paragraph, last sentence and formula: This is not a universal definition; rather it is simply the difference between the two positive or negative sign that can either be conservative or non-conservative depending on the convention chosen. Also, "bias and its uncertainty" needs to be clarified. Specifically, we need to be careful with the language here. Industry believes what is meant is that "the bias and the uncertainty in the bias" are known with a high degree of certainty. It is unclear whether NRC intends that sources of bias and uncertainty in modeling (not tolerances) need to be taken into account.	The NRC staff understands that the use of these terms in relation to criticality code validation is well-known and guidance is provided in this chapter. No change is warrant in response of this comment.
5-30	NEI	Appendix B, footnote 1, sentence 2: NRC should clarify the regulatory basis for license reviewer's to go beyond what is required in the rule as implied in this sentence.	The reviewers are not required to go beyond what is needed to meet the rule. If, however, the licensee uses its validation as justification for a reduced margin of subcriticality, the rigor of its methodology must be greater than would be the case for mere compliance. No change is warrant in response of this comment.
5-31	NEI	Similarity of Critical Experiments, item 4, paragraph 2: "All parameters that can measurably affect the bias ....." Consideration of all items that can measurably affect the bias	The NRC staff considers the terms “measurable” and “statistically significant” are synonymous. As a result, the wording has

		would dictate that all parameters must be evaluated so that one can see which changes might be measurable. 3rd bullet in this section: "Statistically insignificant" is different than "can measurably affect". It is unclear why these two different terms are used since they cause confusion. Perhaps NRC should clarify its intent with their use.	been revised to clarify this.
5-32	NEI	Validation Methodological Rigor, paragraph 3: If more critical experiments were available, the licensee would undoubtedly use them. What then is to be done when a larger number of bench mark experiments are not available? We are not aware of any NRC funded experiments to fill in the known holes when it comes to enrichment ranges, material compositions solid fissile material in fissile solutions etc. Paragraph 5 same section: It is unclear why NRC apparently has confidence in a non-conservative bias, but not in a conservative one. One should understand the bias and what it effects; however, it does not make technical sense to only correct calculations in one direction due to bias.	This guidance reflects NRC's historical prohibition on the use of positive bias. The prohibition was adopted as a conservative practice when the cause of the bias could not be readily ascertained. Now there are more sophisticated analytical methods to evaluate the various contributors to the bias, so a reassessment may eventually be in order. However, this will not be a simple matter of revising the words in the SRP. The staff will consider this comment in future revisions to the SRP.
5-33	NEI	Summary: NRC should consider providing information contained in this section and the Technical Review Guidance near the beginning of this appendix to help guide the reviewer and avoid a "checklist" approach which could result in too much information and detail being demanded in the ISA Summary/License application.	Reviewers' training and qualification is designed to ensure that staff uses guidance appropriately. No change is warrant in response of this comment.
5-34	NEI	Annex to Appendix B: When delta ks and delta kc are due to the same statistical uncertainty of the calculational tool, this seems to be a double hit and should be combined and only used as a onetime penalty.	These are not the same uncertainty. This annex is taken from ANS-8.17, and uses terminology and methods widely accepted in the industry. No change.
5-35	NEI	GEO-2, Column leaks, Ist control: It is not clear how the column diameter is related to recirculation pump volume unless this is meant to be a neutron interaction consideration which is later. Therefore, NRC should clarify its intent.	There are two geometry barriers in this GEO-02. The first is the favorable geometry columns. If solution leaks into the pump, the reservoir is safe volume. Thus, there are two passive geometry controls to meet the DCP. The relationship between these controls has been clarified.
5-36	NEI	GEO-4, Column overflows, 2nd control: Previous discussion	GEO-4 has been revised, per discussion in the

		indicates that double contingency (DC) is met with only the syphon break. This allowance should be specifically noted here in the example if the previous discussion is accurate and consistent with the NRC's intended interpretation. Otherwise, a license reviewer will conclude that DC= two controls or more.	response to Comment 5-26.
5-37	NEI	PC-01, 1st control: Filter replacement is a very routine operation and it does not seem unlikley that one is not re-installed or is not installed correctly such that no leak by of solid material occurs. Both seem to be dependent upon the same administrative requirement to place the filter element inside the filter housing. Discussion of the filter configuration is needed to understand the proposed control.	Appendix 5-C was intended as an illustrative example, and not a comprehensive safety analysis. Therefore, there may be other scenarios than those discussed here, including defeating the filters due to an installation/maintenance error. However, to avoid giving the wrong impression, scenario PC-01 has been revised to add a requirement for independent verification on the installation of each filter.
5-38	NEI	Demonstration of Satisfaction of ISA Requirements, paragraph 4, sentence 7: This sentence is misleading. Criticality does not occur in a computer model. The configuration of the system as it exists in the plant is what ensures subcriticality. It is vital that the actual configuration be controlled, even more so than the "virtual" configuration. The computer model is only a guide and certainly must bound plant conditions. Paragraph 6, sentence 4: This assertion is incorrect. This means that all aspects of the configuration as an IROFS and those addressed under Part 21 will tend to become an essential component. Paragraph 7, sentence 3: This seems to be saying that the single safety function being credited to prevent accidental nuclear criticality is "to keep the fissile material within specified dimensions" yet this is not a "sole IROFS". It is unclear whether this is because the NRC believes loss of configuration control is "not credible". Due to the fact that "configuration of the system is an item relied on for safety" and configuration control is a management measure that assures, it is therefore credible to alter the system in such a way that accidental nuclear criticality is credible. NRC should confirm	A. Revised to say that the modeled configuration “demonstrates” rather than “ensures” subcriticality. B. The point being made here is that the entire facility must be under configuration control, so the configuration of an entire process (e.g., diameter of pipes limited to less than 1” in a recovery process) can be considered an IROFS without undue added burden. This has been clarified.. C. The point being made here is that licensees have latitude to define the boundaries of their systems—some licensees lump all the components working together to perform a safety function as an IROFS, while others make each component a separate IROFS. It makes no practical difference for safety, though it does call into question what is meant by a

		that this is the guidance intended to be portrayed to licensees. Paragraph 8: NRC should clarify the difference between "configuration management and change control".	"sole IROFS." No change. D. Configuration management (defined in 10 CFR 70.4 and discussed in Chapter 11) is controlling the current configuration of a facility or process so as to prevent unintended changes. Change control is the managing of deliberate changes. This section has been revised to clarify that change control is part of the configuration management program.
5-39	NEI	Passive Engineered, SX-02: "Hydrostatically tested" is part of a management measure instead of the IROFS itself. NRC should clarify if this is not what was intended. SX-03: "vents." These vents must be overflows to the floor instead of vents to the ventilation system or scrubber unless the ventilation system/scrubber system is at a lower elevation than the supply tanks. SX-07: Some NRC staff have insisted that this type of control is administrative, not passive because the filters are changed out routinely and might not be re-installed as they are required. Some would say that this common cause failure means the filters are not independent controls. The monthly surveillance implies a duration factor of -1 (0.1 of a year) if frequency / duration of failure (T/2) approach is used. NRC should comment on or clarify this aspect of the example.	SX-02: Technically, hydrostatic testing would be a management measure and not part of the IROFS. This has been revised to clarify this point. SX-03: Replaced the word "vents" with "overflows." They vent to the floor, not the ventilation system. SX-07: The filters would be considered a passive engineered item by their physical nature. However, it is a good point that they are subject to a failure of the type stated. While all engineered controls are in some sense administrative, filters are among the most vulnerable to failures. Since Appendix 5-C is a purely qualitative example, it is inappropriate to get into the scoring. (Probably, in a semi-quantitative method like Appendix 3-A, it would be scored more as an administrative control.) Here it doesn't make any practical difference. The discussion of SX-07 was enhanced to discuss the potential for its common-mode failure, including adding a requirement for independent verification.

Chapter 6, Chemical Process Safety

ID	Source	Comment/Question	Resolution
6-1	NRC	Page 6-1, Line 17 – The guidance states that NRC authority over chemicals may be broader than indicated above. If the broader authority involves the physical security of the chemicals, it should be addressed in the physical security chapter, not the process safety chapter. The note should be moved or copied to the physical security chapter.	The paragraph has been deleted from Chapter 6. A similar but clearer paragraph will be added to section 13.1.
6-2	NEI	Terms "Nexus" versus "Co-mingled": See page 3-21, footnote 4. Use of the phrase, "nexus to the processing of licensed material" appears new. Therefore, NRC's use of this term versus the historical use of "co-mingled" is not clear and industry is concerned that "nexus" implies a much broader interpretation of impacted chemicals than does the term "co-mingled". Also, use of the term could be confusing and potentially overlapping the jurisdictions of the Occupational Safety and Hazards Agency and NRC for the safe and secure use of chemicals.	See response to comment 3-7.
6-3	NEI	It is unclear why the term "co-mingled" as currently used by NRC and understood by industry is not used or referenced in this chapter. Perhaps NRC should clarify its intent.	The text of section 6.1 refers the reader to the definition of the term “hazardous chemicals” produced from licensed materials” in 10 CFR 70.4. This definition uses the term “commingled” referred to in the comment. No change to chapter 6 is warranted in response to this comment.
6-4	NEI	Section 6.4.3.2., Item 1: It should be noted that the majority of dermal and ocular exposures are not caused by licensed material but rather co-mingled material and a quantitative exposure standard(s) for most chemicals do not exist for dermal and ocular exposures. As stated previously, NRC should wait to provide additional guidance in this area until after issuance of final guidance planned by the end of 2015.	As stated earlier, revision 2 of NUREG-1520 does include new information on the subject of dermal or ocular exposure. No change to chapter 6 is warranted in response to this comment.
6-5	NEI	Section 6.4.3.3., Item A(5): "expected to be onsite." NRC should clarify its intent with the use of this phrase since "in	The language is taken from 10 CFR 70.65(b)(7) which identifies information to be contained in

		contact" with licensed material is not consistent with "comingled" and chemicals that are merely "expected to be on site" are not within NRC's jurisdiction.	the ISA Summary. No change to chapter 6 is warranted.

Chapter 7, Fire Protection

ID	Source	Comment/Question	Resolution
7-1	NEI	Section 7.4.3.2.1., paragraph 2: This appears to be a new requirement. The concept that a listing of all IROFS that could be impacted from a credible fire must be included in the FHA is not consistent with traditional Fire Hazards Analysis content. The assessment of the impact of fire on safety is completely different from assessing the impact of fire on IROFS.	This paragraph was revised to read as follows: The FHA should also consider essential circuits that are susceptible to fire damage from credible fires (taking into account transient and temporary conditions within each fire area). Fire damage to systems such as ventilation, cooling, instrumentation, control, or power that may affect safety or security inside or outside of the fire area under consideration, should be evaluated. The FHA should also consider the improper operation of equipment due to spurious signals induced by fire damage. In addition, the effects of combustion products, manual firefighting efforts, and the activation of automatic fire suppression systems should be assessed.

Chapter 8, Emergency Management

ID	Source	Comment/Question	Resolution
8-1	NRC	Page 8-1, Line 17 – The guidance states that an applicant is required to submit an emergency plan when an evaluation shows the dose to a member of the public offsite exceeds certain limits. That guidance is incorrect. The need for an	This section was revised to clarify that the requirements for whether an emergency plan is needed or evaluation demonstrating that an emergency is not needed are described in 10

		emergency plan is based only on the quantities of licensed material requested in the application. An evaluation demonstrating that an emergency is not needed is a voluntary alternative. An evaluation is not required.	CFR 70.22(i). In addition, references to ISA summary have been removed because ISA summaries may not the actual consequences of each accident. ISA summaries specify if the consequences are low, immediate, or high.
8-2	NRC	Page 8-1, Line 45 – The guidance states that an emergency plan should be reviewed in accordance with 70.22(i)(1)(ii). That citation is incorrect. The required contents of an emergency plan are specified in 70.22(i)(3).	This section was revised to clarify the requirements described in 10 CFR 70.22(i).
8-3	NRC	Page 8-2, Line 2 – The citations regarding the evaluation of offsite consequences should include 10 CFR 70.22(i)(2) because that section lists the factors that may be considered in the evaluation.	This section was revised to clarify the requirements described in 10 CFR 70.22(i).
8-4	NRC	Page 8-2, Line 10 – The citations for evaluating an emergency plan should be 70.22(i)(3) and 70.22(i)(4) because those sections list the information that must be provided.	This section was revised to add references to 70.22(i)(3) and 70.22(i)(4).
8-5	NRC	Page 8-2, Lines 26 and 27 – The elements to be reviewed should match the elements listed in 70.22(i)(3) and 70.22(i)(4). Specifically, Item 13 should be certification of compliance with the Community Right-to-Know Act, and Item 14 should be comments from offsite response organizations. We note that the listing of hazardous chemicals is normally included in Item 1 (facility description) and the responsibilities for maintaining the program are normally included in Item 7 (licensee responsibilities).	This section was revised to include both certification of compliance with the Emergency Planning and Community Right-to-Know Act and comments from offsite response organizations to the list.
8-6	NRC	Page 8-2, Line 34 – As noted above, the factors in 10 CFR 70.22(i)(2) should be cited in the guidance for reviewing the evaluation of offsite consequences.	This section was revised to include 10 CFR 70.22(i)(2) in addition to 10 CFR 70.22(i)(1) and NUREG-1140.
8-7	NRC	Page 8-3, Line 13 – Add a bullet to review information about emergency procedures for criticality alarms under SRP Chapter 5.	The Review Interfaces section was revised to include review of information about emergency procedures for criticality alarms under SRP Chapter 5 and review information about fire

			response under SRP Chapter 7
8-8	NRC	Page 8-3, Line 27 – If we are going to review the Baseline Design Criteria in Section 8.4, then it needs to be listed as an area of review in Section 8.3.	Details on guidance on how to review baseline design criteria will be considered in future revisions.
8-9	NRC	Page 8-3, Line 33 – Where is the guidance for evaluating Baseline Design Criteria (BDC)? The documents listed don't address BDC.	This section was revised to include a note that clarifies that there is no formal guidance for evaluating the baseline design criteria in 10 CFR 70.64(a)(6) and that reviewers should refer to the acceptance criteria in Section 8.4.3.3.
8-10	NRC	Page 8-3, Lines 17 through 43 – There are many undefined terms in this section. What is considered "adequate"? What is considered "appropriate"? What is considered "sufficient"? The statement that applicants must commit to these undefined standards implies that they are mandatory requirements, yet the regulation only requires a brief description of the facilities and procedures listed. It would be appropriate to recommend that reviewers consider whether these items are adequate and sufficient, but there is no regulatory basis for demanding a commitment to an undefined standard.	Item number 4 of Section 8.4.3.1.2, Onsite and Offsite Emergency Facilities, with its 7 sub items, were removed because there is no requirement in 70.22(i)(3)(i) for these commitments and most of these items will be addressed in following sections.
8-11	NRC	Page 8-8, Line 19 – What is the regulatory basis for stating that the applicant should commit to "the emergency public information system [that] will provide advance and ongoing information to the media and the public"? The requirements in 10 CFR 70.22(i)(3) only require a commitment to notify offsite response organizations and NRC. There is no requirement to establish a public information system. The guidance in Regulatory Guide 3.67 suggests that plans describe where the public and the media can obtain information. It doesn't suggest establishing a formal public information system. Why is the SRP looking for a commitment to something that isn't required in the regulation or even suggested in the Regulatory Guide?	This item was revised to clarify that a system provides timely information to the media and public on subjects that would be discussed during an emergency, such as radiation hazards, chemical hazards, site operation, and site emergency plans.
8-12	NRC	Page 8-9, Line 4 – Same comment as Item 24 above. There is no regulatory requirement for an emergency public information	This item was revised to clarify that a system is established to provide the public with timely

		program that ensures timely dissemination of accurate, reliable, and understandable information.	information. In addition, several items in this section were revised to ensure consistency with the regulatory requirements for notification and coordination.
8-13	NRC	Page 8-11, Line 41 – Same comment as Items 24 an 25 above. There is no regulatory requirement that emergency drills demonstrate that the public information organization disseminates accurate, reliable, timely, and understandable information.	This item was revised to clarify that emergency drills demonstrate that the emergency organization provides the public with accurate, reliable, timely, and understandable information.
8-14	NRC	Page 8-13, Line 16 – Why does Section 8.4.3.2.3 state that information on the detection of accidents be included in an evaluation that no emergency plan is required? Such an evaluation should consider unmitigated consequences offsite with no credit taken for any response actions. For unmitigated consequences, why would the reviewer need to know the means of detecting the accident, the means of alerting operating staff, and the anticipated response of the operating staff? It implies that credit will be given for response actions.	This section was revised to indicate that the list of items mentioned in this section (evaluation for detection of accidents) is needed to support the use of factors such as engineered safety features and operating procedures.
8-15	NRC	Page 8-18, Line 4 – The title of the Federal register notice is incorrect. It should be "10 CFR Parts 30, 40, and 70, Emergency Preparedness for Fuel Cycle and Other Radioactive Materials Licensees, Final Rule."	This reference has been corrected.
8-16	NRC	Page 8-18 – NUREG-1140 should be added to list of references.	Reference to NUREG-1140 was added to this section.
Additional Changes to Chapter 8			
N/A	NRC	Section 8.4.1, Regulatory Requirements, was revised to correct some regulatory requirements.	Section 8.4.1 was revised to clarify that if the requirements of 10 CFR 70.22(i)(1) applies, then the additional content should be reviewed against the provisions in 10 CFR 70.22(i)(2) – (i)(4).
N/A	NRC	A new item was added to the list of regulatory requirements for facility description in Section 8.4.3.1.1, Facility Description.	Section 8.4.3.1.1 was revised to add descriptions of the area near the site to the list. Additional guidance associated with descriptions of the area near the site was also included.
N/A	NRC	Item 6 of Section 8.4.3.1.1, Facility Description, was moved to	Previous item number 5, "Certification by the

		Section 8.4.1.13, Exercises and Drills.	plant manager (or the individual authorized by the applicant) that the applicant has met all responsibilities under the Emergency Planning and Community Right To Know Act of 1986, Title III, Public Law 99-499, in accordance with 10 CFR 70.22(i)(3)(xiii)," is now under exercises and drills, Section 8.4.1.13.
N/A	NRC	Section 8.4.3.1.8, Responsibilities, was revised.	Editorial changes to improve clarity.
N/A	NRC	Section 8.4.3.1.9, Notification and Coordination, was revised.	This section was revised to include editorial changes, clarify the necessary commitments, and ensure consistency with the regulatory requirements.
N/A	NRC	Section 8.4.3.1.12, Safe Shutdown (Recovery and Facility Restoration) was revised.	Minor editorial changes.
N/A	NRC	Section 8.1 Evaluation Findings, was slightly revised.	This section was revised to include editorial changes, clarify the necessary commitments, and ensure consistency with the regulatory requirements specific to emergency management.

Chapter 9, Environmental Protection

ID	Source	Comment/Question	Resolution
9-1	NRC	Page 9-19 – The page numbering in Chapter 9 needs to be corrected. The chapter begins on Page 9-19 instead of 9-1.	The page numbering for Chapter 9 has been corrected.
9-2	NRC	Page 9-19, Line 16 – The statements that this chapter doesn't address the environmental review required by Part 51 is misleading and confusing. NUREG-1520 needs to address all of the requirements in Part 70 including the requirement in 10 CFR 70.21(f) to include an environmental report with the application, and the requirement in 10 CFR 70.23(a)(7) that NRC management decide that the action called for is the issuance of the proposed license. Sections 9.1 and 9.3 need to	A new item addressing the requirements of 10 CFR 70.21(f) has been added to the list provided in Section 9.4.1, "Regulatory Requirements."

		clearly state that compliance with the environmental review requirements in Part 70 are addressed in Chapter 9. Referring to NUREG-1748 for detailed guidance is fine, but the SRP should acknowledge that high level coordination of the environmental review is addressed in NUREG-1520.	
9-3	NRC	Page 9-20, Line 30 – The SRP states that an ISA must be performed to receive authorization to possess a critical mass of SNM. The statement is incorrect. Universities and other research and development facilities are authorized to possess a critical mass without performing an ISA. Subpart H of Part 70 only applies if the critical mass is to be used for a fuel cycle operation.	The section was revised to clarify that if the application is requesting authorization to perform an activity identified in 10 CFR 70.60, then an applicant must perform an ISA and prepare an ISA summary.
9-4	NRC	Page 9-23, Line 22 – The guidance should cite the requirement in 10 CFR 70.21(f) to clearly establish the link to Part 70 before jumping to the requirements in Part 51.	The section was revised to include 10 CFR 70.24(f) as part of the list of regulatory requirements.
9-5	NRC	Page 9-23, Line 31 – The guidance should clearly state that the requirement in 70.22(f) only applies to facilities making fuel containing plutonium. The requirement doesn't apply to facilities making fuel containing uranium (which is most of the facilities). See definition in 70.4 of *plutonium processing and fuel fabrication plant.*	The section was revised to clarify that the requirement in 10 CFR 70.22(f) only applies to facilities making fuel containing plutonium.
9-6	NRC	Page 9-24, Line 42 – The guidance makes a specific reference to 10 CFR 51.22(c)(11), but doesn't discuss any of the other categorical exclusions which could apply. Suggest including the following additional examples: a. An updated decommissioning funding plan may be excluded under 51.22(c)(10). b. A revised physical security plan, or fundamental nuclear material control plan, may be excluded under 51.22(c)(12). c. Use of SNM for research and development may be excluded under 51.22(c)(14). d. Approvals of direct or indirect license transfers are excluded under 51.22(c)(21). e. Granting exemptions may be excluded under 51.22(c)(25).	Section 9.4.3.1, "Environmental Report or Categorical Exclusion," has been revised to address the requirements listed in 10 CFR 51.22 (c). Items from (a) to (e) have been added to this section as well as the requirements from 10 CFR 51.22(c)(11).
9-7	NRC	Page 9-31, Line 43 – Same comment as Item 32 above. Subpart H doesn't apply unless the critical mass is authorized	The section was revised to clarify which applicants are required to perform an ISA and

		for a fuel cycle operation.	prepare an ISA summary per 10 CFR 70.60.
9-8	NRC	Page 9-36, Line 26 – The suggested language fails to address the finding required by 10 CFR 70.23(a)(7) that issuance of the license is the appropriate action.	Section 9.6, "Evaluation Findings," was revised to address the finding required by 10 CFR 70.23(a)(7).
9-9	NRC	Page 9-36, Line 38 – The suggested language fails to acknowledge that other categorical exclusions may apply to the action.	Section 9.6, was revised to acknowledge that there are other categorical exclusions may apply to the action.

Chapter 11, Management Measures

ID	Source	Comment/Question	Resolution
11-1	NRC	Page 11-6, Line 15 – The only guidance discussed is limited to facilities making fuel containing plutonium. Most of the fuel facilities make fuel containing uranium, not plutonium. Where is the guidance for the uranium facilities?	The NRC has endorsed industry guidance (ASME NQA-1) for quality assurance programs that comply with Appendix B to 10 CFR Part 50 (Appendix B). Guidance for management measures programs that do not comply with Appendix B is contained in NUREG-1520, as there is no further industry or NRC guidance available at this time. Therefore, there are no additional references to provide for regulatory guidance.
11-2	NRC	For Section 11.2, of Chapter 11, technical reviewers in the electrical power, digital instrumentation and controls and mechanical design (e.g., HVAC) areas should be supporting the reviews of the Quality Assurance Reviewer to ensure management measures or appropriate QA programs are applied to ensure IROFS are designed, implemented and maintained to be available and reliable when needed.	Typically, descriptions of management measures do not include highly complex, detailed descriptions of the SSCs to which the controls are applied. Analysis of such systems and their importance to plant safety and security is performed in the ISA and reviewed by staff as part of the Chapter 3 license review and periodic inspection activities. If sufficient technical content were provided in a Chapter 11 submittal such that technical expertise were required beyond the scope of the quality assurance reviewer's knowledge, the primary reviewer would seek out support from

			appropriate support staff. This section was revised to include technical staff knowledgeable in equipment/facility design, construction, installation, and maintenance as supporting staff.
11-3	NRC	The Chapter 11 section should acknowledge the need for reviewers to perform evaluations of the applicant's proposed management measures that will be applied to the design and implementation of IROFS, not solely the quality practices specifically listed as "included" in the definition, among which is "maintenance."	Chapter 11 does acknowledge the need for reviewers to address design and implementation of IROFS. For example, the staff's review of applicant controls for configuration management includes a review of the applicant's process(es) for evaluating the CM program, design requirements, document control, change control, assessments, and design reconstitution for existing facilities. As part of the Other Quality Assurance elements management measure, staff will also review the QA principles to be applied to the design, procurement, construction, operation, maintenance, inspection, testing, and modification phases of a facility's life cycle. Implementation of licensee programs for management measures are also inspected through the NRC inspection program. Although Chapter 11 does address the design and implementation of IROFS, in order to enhance the clarity of review guidance, several sections were revised to resolve this comment (i.e. 11.4.3.8.4 and 11.5.10).
11-4	NRC	Chapter 11, Section 11.4.3 and the sub-sections need to include specific review guidance to evaluate management measures in the above areas.	Although the staff considers that guidance is already included in Section 11.4.3 (e.g. 11.4.3.1 and 11.4.3.8), it was revised to better describe the review of these areas. See response to comment 11-3 above.
11-5	NEI	Chapter 11, Management Measures: Industry is concerned that NRC's potentially new approach to management measures	NRC staff acknowledges industry's concern regarding whether or not certain program

		deviates from current NRC-approved licensee practices and programs. For example, NRC's September 2014 meeting slide 20 regarding Management Measures states that there are certain "not graded" Quality Assurance (QA) program elements. As we stated during the meeting, industry does not agree that certain QA program elements, e.g., document control or identification of control items, are not, cannot, or should not be graded. In fact, one licensee commented that all management measures at their facility are graded from a risk perspective and that NRC has approved such an approach. To treat all program elements equally does not allow the necessary risk-informed approach to management measures and diverts limited safety resources from the more risk significant program elements to the less significant ones. Therefore, we do not support this concept and do not currently understand NRC's basis for it. In addition, Draft Revision 2 of NUREG-1520 is vague and potentially confusing for license reviewers in that it does not provide specific acceptance criteria to determine whether proposed management measures are sufficient.	elements may be graded. The guidance provided, as with any SRP, is intended to describe the scope, level of detail, and acceptance criteria for license applications to guide staff in reviewing submittals and to aid applicants in determining what information to present in a license application. The guidance does not preclude licensees or applicants from suggesting alternative approaches (i.e., a different set of graded management measures) to those specified in the SRP to demonstrate compliance with applicable regulations. The NRC staff understands that the concept of "grading" is subjective. For instance, 10 CFR 70.72(a) requires that each licensee establish a configuration management system to evaluate, implement, and track each change to the site, structures, processes, systems, equipment, components, computer programs, and activities of personnel. Therefore, configuration management must be applied to all IROFS. The actions taken as part of configuration management may range depending on the nature of the change and the importance of an item or activity to safety. In its first draft of Revision 2 to NUREG-1520, the staff identified configuration management as a management measure not subject to grading. This may result in confusion. As such, revisions have been made to provide further clarification on Sections 11.3 and 11.4. The sections were revised: 1. Section 11.3 –to provide further clarification for a graded program for management measures.

			2. Section 11.4.3 – to configuration management to the list of management measures that may be subject to grading. 3. Section 11.4.3.4 – to provide further clarification on grading configuration management. 4. Section 11.4.3.8.B – to move Document Control, test control; and Handling, Storage, and Shipping from non-graded to graded category and to include further clarification for grading these elements. 5. Section 11.4.3.8.C – to enhance guidance for some the other QA elements that are not conductive to grading (i.e. Identification and Control of Items; Inspection, Test, and Operating Status; and Control of Nonconforming Items). *** In response to the comment that specific acceptance criteria are not provided, NUREG-1520 does not intend to establish prescriptive criteria for graded management measures programs. Fuel facilities have unique designs, and use of the ISA process results in a wide degree of variance in the designation of IROFS among licensees. As such, to identify a bounding set of criteria for establishment of a system for grading IROFS significance and applying management measures commensurate with an item's importance to safety would be ineffective. The guidance provided is intended to aid licensees in

			establishing graded programs by providing examples of ways to implement graded management measures and describing the manner in which staff will review such programs.

Chapter 12, Material Control and Accounting

ID	Source	Comment/Question	Resolution
12-1	NEI	Delete at this time based on the Parts 73 and 74 rulemakings to avoid conflicts or inconsistencies.	See staff's response to comment G-2.
Additional Changes Performed to Chapter 12			
N/A	NRC	This chapter was revised to remove references to guidance documents that are currently being revised or not finalized.	References removed to ensure consistency with currently available guidance.

Chapter 13, Physical Protection

ID	Source	Comment/Question	Resolution
13-1	NRC	Page 13-4, Line 38 – Add a reference to NUREG-6667, Standard Review Plan for Safeguards Contingency Plans. NUREG-1520 outlines review procedures for security specialists and a specialist reviewing a safeguards contingency plan needs to be aware of NUREG-6667.	This section was revised to include reference to this guidance document.
13-2	NEI	Delete at this time based on the Parts **73** and 74 rulemakings to avoid conflicts or inconsistencies. • For example, section 13.4.2. 1, item 3 references section 73.67 and sub items that will no longer be relevant with the potential Part 73 rulemaking as stated in the Draft Regulatory Basis and by NRC staff during the June and September 2014 public meetings.	The rulemaking referred to is several years from completion. Until that time these requirements apply. Therefore, no change is warrant in result to this comment.
13-3	NEI	Review Items 1 through 4 and re-write as need to make sure	Section 13.4.2, "Moderate Strategic or Low

		the correct regulations are cited.* *This comment was received during the public meeting held on September 23, 2014.	Strategic Special Nuclear Material," was revised to correct the list of regulatory requirements and to ensure consistency with 10 CFR 70.67.