



NUCLEAR ENERGY INSTITUTE

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VIA ELECTRONIC MAIL
(trd@nrc.gov)

Mr. Thomas R. Decker
U.S. Nuclear Regulatory Commission
Region II Office
Sam Nunn Atlanta Federal Center, 23 T85
61 Forsyth Street SW
Atlanta, GA 30303-8931

Dear Mr. Decker:

**REFERENCE: NRC Workshop on Fuel Cycle Inspection Procedure
Revisions – Comments by the Nuclear Energy Institute on
Proposed Draft Revisions of Inspection Procedures**

The Nuclear Energy Institute (NEI)¹ on behalf of its industry members wishes to first thank you and your colleagues at the Nuclear Regulatory Commission (NRC) for the very informative August 2005 workshop on proposed revisions to fuel cycle facility Inspection Procedures (IP). We appreciate the Commission's initiative to revise the IPs so as to align them with the new risk-informed, performance-based regulations in Subpart H of 10 CFR Part 70. Additional efforts to reduce, or eliminate, duplication amongst the IPs and to introduce a more uniform procedure format are also very welcome. These initiatives should improve the efficiency of the inspection process and enable the NRC to allocate its inspection resources to truly safety-significant issues.

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

Mr. Thomas R. Decker
September 22, 2005
Page 2

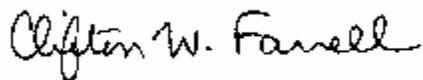
The attachments to this letter provide comments upon issues discussed at the workshop and on the proposed draft revisions of several IPs.

The first attachment provides some high-level comments on how industry believes inspections should be refocused. The transition from purely “compliance-based” inspections to ones that address risk and the adequacy of methodologies and programs to ensure operational safety constitutes a major change in inspection activity design and implementation. The first attachment also addresses how this transition should be reflected in revisions to certain IPs and how inspection resources should be allocated to properly address the truly, safety-significant risks at a licensed facility. The importance of basing inspections on regulations, license commitments, and codes and standards, rather than against “guidance,” such as Standard Review Plans, Interim Staff Guidance or IP guidance, can not be overemphasized. Suggestions for creation of new IPs that either combine current IPs or that more closely follow Part 70 regulations are included.

The second attachment provides detailed comments on ten of the thirteen draft IPs that the NRC released in July 2005. Many of these comments were contained in a 12-page letter that was E-mailed to you and Wilkins Smith on August 2 and that was also distributed to workshop attendees. Attachment Two expands on many of these preliminary comments and provides numerous suggested improvements. Very limited comments are, however, provided on three IPs that the NRC agreed to re-write – *Maintenance and Surveillance Testing* [IP88025] and *Nuclear Criticality Safety Program* [IP8801X & IP8801Y].

NEI appreciates the opportunity to comment on the proposed IP revisions. The workshop presented an excellent opportunity to discuss how the inspection process should be overhauled. We sincerely appreciate the importance the NRC places on soliciting licensee participation in drafting new IPs that are based on the new Part 70 risk-informed, performance-based regulatory framework. Please do be in touch if we can provide any additional information or should you wish any clarification of our remarks.

Sincerely,



Dr. Clifton W. Farrell
Attachments

- c. Wilkins Smith (wrs@nrc.gov)
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- Robert C. Pierson (rcp@nrc.gov)

ATTACHMENT ONE

INSPECTION PROGRAM STRUCTURE

This Attachment examines the core principles of a fuel cycle inspection program and how they should be revised to be consistent with the new risk-informed, performance-based regulatory requirements of Subpart H of 10 CFR Part 70.

Inspection Principles

Inspections are conducted to confirm that a facility is operating in accordance with applicable regulations and license commitments. They attest to the adequacy of a licensee's safety performance.

Performance shall be primarily judged against applicable regulations and license commitments. Inspections may also assess performance against relevant industry codes and standards and may occasionally even consider adherence to good industry practices. Inspections shall never, however, be based upon *guidance* presented in documents such as Standard Review Plans (SRP), Interim Staff Guidance (ISG) documents or in Inspection Procedures (IP). The *guidance* in such documents is just that – possible ways to prepare a license application (SRP) or to meet the requirements of an inspection (IP). IP guidance that is overly prescriptive could, for example, inadvertently cause a time-pressed inspector to turn it into a “checklist” for completing the inspection while neglecting to focus attention on priority issues. For this very reason, IPs should never include references to guidance documents such as those noted above, and in particular, NUREG-1520.

Impact of Subpart H Regulations on IPs

Fuel cycle facility IPs may require revision in light of the new regulatory framework imposed by Subpart H of 10 CFR Part 70.

Some licensee requirements are inherently prescriptive, such as those governing radiation protection, radwaste management, Part 19 worker training and emergency preparedness. The new Subpart H regulations have very little, if any, effect on such IPs, and so few revisions are expected to align them with the NRC's risk-informed, performance-based regulatory philosophy. Inspection of licensee performance in these areas will remain “compliance-based,” that is to say, a licensee either complies or does not comply with a set of prescriptive requirements.

Other licensee requirements have now become risk-based and the Subpart H regulations have a major impact on a licensee's safety performance. Inspection of IROFS and management measures applicable to IROFS in such areas as facility change management, maintenance, corrective action and configuration management, are now “risk-based.” Introduction of the “graded approach” concept, whereby the licensee tailors a safety program to match the risk posed by credible

accidents, must also be addressed. IPs for these disciplines will require major overhauls to focus on the adequacy of licensee methodologies and programs to ensure adequate safety so that the performance goals of §70.61 are met.

Allocation of NRC Inspection Resources

The new Subpart H regulations will profoundly impact how the NRC allocates its inspection resources. From a high-level perspective, NRC inspectors should focus on plant activities where a credible accident could cause the §70.61 performance thresholds to be exceeded. Inspections of risk-informed areas, such as the maintenance of IROFS or operation of the facility change process, should primarily focus on methodologies and programs that the licensee has implemented to meet the safety program goals. Knowing that a licensee's problem identification system is well designed and operational, that self-identification of problems is occurring and that corrective actions are being implemented in a timely fashion are very important actions that the NRC inspector should assess. Subsequent inspections should concentrate on *changes* made to the plant and its operations to ensure, for example, that the facility change process was correctly used, that compliance with regulations and license commitments is in place and that the updated ISA continues to accurately reflect plant safety. Expenditure of additional resources to examine higher-risk plant operations or on areas where historical problems have been encountered is also justified. However, inspectors who focus on instances such as operators failing to strictly follow procedures, the licensee missing a report filing deadline by a few days, or the licensee failing to update a current procedure with minor changes are not profitably expending NRC inspection resources. Deficiencies such as these should not be ignored as they may be indicative of underlying problems, but as their commission could never cause the plant operations to exceed the §70.61 performance thresholds, they should not be the prime focus of an inspector.

Inspectors should seek an integrated view of plant safety. To do so, a majority of their activities should focus on plant activities and processes in which an accident could result in the §70.61 performance objectives being exceeded. Unless the NRC identifies some major, safety-significant deficiency in a license that it previously approved, there should not be a need to periodically review, for example, the nuclear criticality safety calculations that underlie NRC-approved plant operations. Inspectors should focus a majority of their attention on:

- facility changes – especially those that were deemed by the licensee to not require NRC pre-approval – and proposed facility changes
- additions to, and revisions of, the ISA
- methodologies and procedures used to ensure safe operation of the facility (e.g. problem identification and resolution)

If facility changes could never threaten non-compliance with the §70.61 performance requirements, then they can only have minimal safety impacts and should not receive high levels of inspection resources. Totaling up apparent violations that have little, if any, safety-significance, should not be a measure of an inspector's productivity or of the facility's safety. NEI recommends that a majority of inspector resources (75-80%) be spent on risk-significant aspects of a plant's operations, and the balance (20-25%) on compliance with prescriptive requirements.

Some inspections should be conducted at a high, programmatic level, whereas other will be far more technical and examine calculations, plant procedures and equipment configurations. Far better coordination in the planning of inspections is necessary to eliminate duplication between programmatic and technical aspects of an inspection. This coordination would include, for example, the concurrent rather than separate, examination of designated IROFS and their supporting management measures.

Inspection Procedure Titles

Inspectors rely on IPs to ensure compliance with regulations and licensee commitments in a risk-informed manner to demonstrate plant adequate safety. To better align IPs with the Subpart H regulatory changes and to especially focus on the ISA and management measures, the NRC should consider the following:

- consolidation and closer alignment of the IPs with the §70.62(d) management measures (maintenance, configuration management, etc.)
- addition of an IROFS IP to ensure that designated IROFS are installed, that supportive management measures are in place, etc.
- consolidation into one IP of "compliance-based" inspections of analytical procedures and/or calculations, if required
- merging of the two nuclear criticality safety IPs, *Nuclear Criticality Safety Program* [IP8801X] and *Nuclear Criticality Safety Evaluations and Analyses* [IP8801Y]
- merging the current *Operational Safety* [IP 88020], management measures, and the current *Maintenance* [IP 88025] into one IP that could be named "*Operational Performance*"

Finally, as discussed at the workshop, inspections of various safety disciplines may better be conducted under three categories: (1) analytical, (2) programmatic, and (3) operational.

ATTACHMENT TWO

COMMENTS ON SPECIFIC INSPECTION PROCEDURES

General Observations

(a) Inspection Philosophy

Some licensee requirements are inherently prescriptive and the corresponding Inspection Procedures (IP) will, by necessity be “compliance-based.” Compliance-based IPs are little affected by the new Subpart H regulatory requirements and should not require major overhauls. Examples include radiation protection [IP83822], emergency preparedness [IP88050], radwaste management [IP88035], exercises and drills [IP88051] and environmental monitoring [IP88045]. Other licensee requirements are risk-based and require major alignment with the Subpart H requirements, especially the ISA and management measures. Examples include plant safety [IP880XX], operational safety [IP88020] and maintenance [IP88025].

The draft, risk-based IPs, unfortunately, remain highly compliance-focused and are frequently unnecessarily prescriptive. While some have meshed very well with the new Part 70, Subpart H regulations, adoption of a risk-focused approach is totally devoid from others. Our expectations for incorporation of a new inspection philosophy that focuses less on the “mining” of a licensee’s problem identification system to simply chalk up violations, and more on an approach that addresses the adequacy and effectiveness of a licensee’s problem identification system and corrective action program, remains unfulfilled. Procedural violations will occur from time-to-time, regardless of a licensee’s best efforts to prevent them. However, undue focus on citation of violations having little or no safety (risk) significance, benefits neither the NRC nor the licensee.

Improvements in the inspection philosophy may be incorporated into the 2600 “mother” document, which, the NRC advises, will not be released into the public domain. However, the inspection philosophy should incorporate the following three foci of risk-informed oversight. They are presented in decreasing order of focus (high-level to low-level):

(1) Integrated Safety Analysis (ISA): The primary focus of risk-informed oversight should be the ISA. When properly conducted and implemented, the ISA meets the regulatory performance standards of Part 70, thus assuring adequate facility safety-based risk in the handling of licensed material. This category would include IROFS (equipment or procedures) and the underlying analyses (consequence evaluations, PHAs, NCSEs, set-point determinations).

The focus should be on whether or not accident sequences are identified/prevented, important analyses are accurate, set-points are appropriate, etc.

(2) Programs and Methodologies: The secondary focus of risk-informed oversight should be a licensee's problem identification system, corrective action program (CAP) and management measures. An effective and robust program to promptly identify problems and to work to prevent their recurrence is a key to on-going plant safety. While not routinely the source of violations, its proper application (identification and/or CAP aspects) is examined to determine the severity of a violation. Other non-CAP management measures are included here as well. This category would include the formal programs to identify, communicate, investigate and take corrective actions to prevent problems and the management measures needed to assure the reliability and availability of IROFS. Inspectors should focus on evaluating these *programs*, because it is far more likely that serious problems will be identified (and thus prevented) by the many licensee personnel than by the few inspectors. Thus, inspectors should waste little time looking for the "problem" and more time evaluating the adequacy of a licensee's problem identification and resolution programs.

(3) Good Practices: The third and final focus of risk-informed oversight should be examination of the licensee's identification and implementation of good operating practices. By definition, significant risks are addressed in the ISA (for credible high and intermediate consequence accidents). However, good practices are expected, and are important in maintaining doses ALARA. This category would include low-consequence accidents, Part 20 (radiological surveillance, contamination control, dosimetry, etc.) safety audits/inspections (except those that are considered IROFS management measures), Part 70.24 CAAS equipment and associated programs, etc. This category would also likely capture basic non-compliance matters (technical non-compliances that have no real impact on ISA/CAP/MM program's capability, availability or reliability).

The real challenge with the above three-step hierarchy will be changes in an inspector's focus. Inspectors must think about potential problems with safety-significance that have been missed and fully analyze the situations that have already been identified. No longer will "checking the boxes" by walking through the inspection points typically laid out in the inspection procedures constitute an acceptable inspection. "Mining" a licensee's problem identification system for violations will no longer be acceptable, but rather rigorous examination of the licensees' safety programs and methodologies will become paramount. The results of this new risk-informed oversight and inspection will be beneficial both the licensee and the NRC staff and enhance

the public's perception and understanding of facility safety. The new philosophy also puts the burden on, and provides the credit to, licensees for doing their own robust self-assessments.

(b) Overarching Comments

Some additional general observations are offered:

- there is inconsistent acknowledgement of Part 70, Subpart H regulatory changes and terminology (e.g. IROFS, management measures). Some risk-based IPs totally ignore the existence of these important changes. Thus, there is highly uneven adoption of risk-based inspection guidance. IPs should cite and use Part 70 requirements and license commitments as the basis for the inspections. Several of the IPs lead the inspector to expect program features that are not required by regulation or by existing license commitments.
- there is generally no parallel structure between the *Inspection Requirements* and *Inspection Guidance* sections. In many procedures, the correlation between the requirements and the guidance is not very good. Frequently the guidance contains “requirements” and requirements are worded more like guidance.
- risk (or “performance-based”) as opposed to “compliance-based” inspection areas, they should be conducted against the regulations, licensee commitments and codes and standards. Licensee compliance with regulatory requirements demonstrates adequate safety. Some inspection procedures (e.g. IP8801Y) imply that demonstration of adequate safety requires more than compliance with regulatory requirements (see IP83833, page 4, last paragraph for an example of a good way to capture this type of objective). Licensees should never be inspected against NRC guidance, such as contained in NUREG-1520, Standard Review Plans, Interim Staff Guidance and IPs. Industry fears that technical reviewers – particularly inexperienced reviewers -- will use “guidance” as “regulation” and thereby impose new requirements on licensees. Several of the draft IPs lead the inspector to expect program features that are not required by regulation or existing license commitments
- IPs should use/define terms that are consistent with industry standards. Frequently the usage of terms is not consistent with those used in the ANSI/ANS standards or by industry in general.
- the inspection procedure for NCS training (IP88015) was not included in the package of draft revisions. As IP88015 will likely overlap with 88010, these two procedures should be jointly reviewed to ensure they are consistent and do not overlap to any excessive extent.
- inconsistent use of terminology pervades many procedures (e.g. regulatee vs. licensee, IROFS vs. controls or SSCS)

- as part of the inspection program the NRC appears to be leaning to a more reactor-type approach with Performance Indicators. An NRC-industry effort in 2001-2003 to develop comparable performance indicators was not successful due to the pronounced differences amongst individual licensed facilities. Industry would encourage the NRC to not again attempt to revive the performance indicator approach for licensee assessment

Procedure 83822 – *Radiation Protection*

This IP is well-written and aligns well with a “compliance-based” focused inspection. It contains a few broad statements and a little unnecessary repetition, but overall is a reasonably well drafted IP. No revisions are recommended.

The IP includes several excellent statements that should be included in risk-based inspections. They direct the inspector to:

- consider risk in the inspection: “...[*the RP program.. should be examined/ commensurate with the potential risk involved in the licensee’s activities...*]” [§02.01]
- focus on plant changes since the previous inspection: “...*changes in the radiological protection procedures made since the last inspection [should be examined to ensure they]...are consistent with regulations and license requirements...*” [§02.02]
- evaluate the licensee’s proactive actions to self-identify and remedy radiation protection issues: “...*determine that corrective actions have been taken...*” [§03/06(a)]

Procedure 880XX – *Plant Safety Modifications*

This inspection procedure closely integrates the Part 70, Subpart H regulations (specifically §70.72) and terminology with inspection activities. The IP seems to primarily focus on the licensee’s configuration management system, but also extends into functioning of the §70.72 facility change process and baseline design criteria. (No inspection guidance is, however, offered for compliance with §70.64, and this suggests that this objective (§01.04) could easily be omitted from the IP.). By combining these three regulatory requirements, the IP becomes rather cluttered and confusing. **The NRC should consider drafting separate IPs for the configuration management system and for the facility change process.** The IP’s directions to the inspectors to base their work on the risk-significance of various plant modifications (e.g. §03.01) is very welcome.

Several statements are far too broad (e.g. §02.02(a) which directs the inspector to review the ISA and ISA Summary – an exercise that would take weeks to

accomplish). The IP should direct the inspectors to focus on changes to the plant's design and operations since the last inspection; this important direction is missing in some sections (e.g. §02.02(a), but present elsewhere (e.g. §03.04(b)(3)), and should be stated throughout the IP. Regrettably, some old terminology persists (e.g. references to SSCs) and some sections (§03.02(c)) are unacceptably prescriptive and too similar to reactor inspection terminology. These must all be corrected.

§01.02: delete reference to “*structures, systems and components (SCCs)*” in this and many following sections (e.g. §03.02(a), §03.02b(3), §03.02c(2)(e), §03.04a(1)). Replace with the IROFS terminology.

§01.04: there are no requirements or guidance for application of §70.64. Delete this objective.

§02.01: the suggestion that a licensee transmit voluminous information to Headquarters prior to an inspection must be stricken. The NRC should contact the licensee prior to the inspection and identify which documents are requested for review at the facility. A major principle of the Part 70 revisions was to keep all safety analysis documentation (i.e. ISA, NCSEs) at the licensed facility for NRC review. Delete the second sentence. Also, the Requirements should state that plant modifications made since the previous inspection will be examined.

§02.02(a): “*Summary*” in the term “*ISA Summary*” should be consistently capitalized. This sentence is far too broad. The inspectors should only consider changes to the facility since the prior inspection and examine whether such changes have been properly analyzed and recorded.

§02.02(c)(2): addition of “*designed*” prior to “*implemented*” may be helpful

§02.02d(1): although no timeframe is presented for updating of such documents, a debate on what constitutes a “*reasonable period of time*” may be inevitable. Should greater clarity be provided to the inspector? Replace “*applications*” by “*amendments*” in the third line.

§03.01: the sentence “...*the elections should be based on the risk-significance of the modifications...*” is ***excellent*** and should be included in every IP. Insert a comma after “*inspectors.*”

§03.01(d): capitalize “*Summary*”

§03.02: inspections must be made against the regulations and license commitments, and *not* against guidance. Although the last sentence of §03.02(a) correctly cautions the reader to not rely on NUREG-1520 or NUREG-1513, there is a significant danger that these two documents will be considered to be the standard against which the inspection will be conducted. In the “NOTE” make reference to IROFS.

§03.02(b): for consistency of terminology with §02.02(b), the title of this section should read “*Testing Review.*” In point (3), make reference to IROFS.

§03.02(c): this section is compliance-based rather than performance-based and requires modification. It appears to have been lifted from a

reactor IP, for many reactor terms and requirements are employed. In 3(e) the implication is that IROFS must be seismically qualified. There is no regulatory requirements for this. Delete (e). Section 3(g) only applies to GDPs, but not fuel cycle facilities. Clarify this discrepancy and limit the applicability of 3(g). The requirement of section 3(h) is unnecessary and so broadly stated that literally days or weeks would be required to ensure that the fire protection systems are installed per design. This is inappropriate guidance to meet the §02.02(c) requirement. Revise. The guidance in section 3(d) that “*adequate physical separation/electrical isolation exists for redundant trains of safety-related equipment*” may pertain to redundant systems for double contingency and prevention of common failure service issues such as shared battery power supplies. If not, this sentence could direct the inspector deeply into common mode failure analysis without much useful guidance. Clarification is needed.

§03.02(c)(4): inspection of management measures is already being addressed in other IPs. The redundancy of repeating this inspection in IP880XX must be deleted.

§03.03(d)(4): why is fire safety identified for special examination? Why not nuclear criticality safety issues? Why not other safety programs? This focus is inappropriate.

§03.03: for consistency with §02.03 terminology, this section should be entitled “*Identification and Resolution of Problems*”

§03.04(a)(1)(b): correct the English expression by replacing “*between*” by “*among*” (The former word is used to compare two objects, the latter word is used to compare more than two objects.)

§03.04(a)(1)(c)(6): make reference to IROFS

§03.04(a)(1)(c)(9)¶2: replace “*between*” by “*among*” (see earlier English grammar note)

§03.04(a)(5): insert the word “be” at the end of the first line so as to read “*...should be trained on and be familiar with the ...*”

§03.04(b)(3): this is ***excellent*** guidance by directing the inspector’s attention to “*...analyses established since the last inspection...*” This is an underlying theme of industry’s comments – that inspections should not always re-invent the wheel, but focus their attention on plant changes implemented since the previous inspection.

Procedure 88005 – Management Organization and Controls

There are positive features of this IP that align the guidance with the Subpart H regulatory changes, including: (i) referencing specific Part 70 regulations while establishing inspection requirements (e.g. §02.02(c)), (ii) directing the inspector to focus on safety-significant events (e.g. §01.04), (iii) directing the inspector to examine issues that have transpired since the last IP88005 inspection (and not on

previous, historical events)(e.g. §03.01), and (iv) using the license and commitments as the inspection basis (e.g. §03.06).

There are, however, numerous instances of duplication (redundancy) with other IPs, particularly as applied to management measures. Some inspection activities – especially on management measures -- should better placed in other IPs. IP88005 seems to have been written by a reactor inspector, for there are numerous instances in which reactor terminology and requirements have been incorporated into the guidance for inspection of fuel fabricator licensees. A major area of concern is §03.06 on Quality Assurance. Although §03.06 (correctly) conditions the QA guidance on the existence of license conditions that may impose QA requirements, some guidance is not so conditioned (e.g. “...*whether components manufactured at vendor facilities are inspected at the vendor shops and/or upon receipt...*”). There is no such QA regulatory requirement for Part 70 licensees. The first sentence of ¶3 of §03.06 (“...*sign-offs attesting to overall conformance to the requirements for component design, testing and installation...*”) has no regulatory basis. These reactor requirements should be deleted from IP88005.

The IP is much too detailed and overly prescriptive. It appears to be a mixture of license application prescription and performance-based operations, especially in the area of management measures. Some reactor terms, such as “*root and contributing causes*” (§03.04(b)) must be omitted, for they imply conducting a formal root-cause analysis that may not be needed by a Part 70 operation.

Although the IP does occasionally condition inspection to focus on safety-significant issues, issues such as “*event reviews*” contain no reference to the Part 70 ***graded approach***. The IP directs that all events should be investigated at the same level and all within 30 days. The same concern applies to the preparation of “*periodic progress reports*” when no allowance for a graded approach is permitted.

References to a license’s Corrective Action Program in §03.04(4)(b) should better be relocated to a new IP that solely addresses the design and operation of the licensee’s programs to identify, evaluate and remedy operational deficiencies in the plant.

§01.06: there is no specific requirement for the licensee to have a program “...*to ensure the quality and integrity of IROFS...*” There is no NQA-1 requirement for Part 70 licensees, but through application of management measures, the licensee will ensure that the IROFS are available and capable of performing their functions when required. Clarify this expectation.

§02.02(b): there is a continual omission of other safety programs in the IP besides those four that are mentioned. Why does not chemical safety warrant any consideration? Same comment in §03.02(b)(2)¶2.

- §03.02(b)(2)¶2: inspection of the configuration management system should be relegated to a separate management measures IP (IP880XX). See earlier discussion in Attachment One.
- §03.02(c)(1)¶1: this action will have been performed as an update of the ISA and ISA Summary when evaluating facility changes (part of the 70.72 Facility Change Process). Correct and clarify the language.
- §03.04: the title of this guidance section should be modified for conformity with that of §02.04: “*Reviews, Audits, Assessments*”
- §03.04(a)¶1: replace “shiftly” by “shift” for correct English expression
- §03.04(b): the title of this guidance section should be modified for conformity with that of §02.04(b): “*Event Review*”
- §03.04(b)(2): for consistency throughout the IP (e.g. with the subsequent §03.04(b)(1)), add the words “*if required*” or “*if appropriate*” after NRC. Not all events will have to be reported to the NRC – use the graded approach consideration.
- §03.04(b)¶1: there is no regulatory requirement to “...*evaluate root and contributing causes*...” as might be required for a power reactor. Revise.
- §03.04(b)(5) on page 9: there is no requirement that every incident be reported or analyzed within 30 days. Application of the graded approach negates the IP claim. Revise.
- §03.06: see earlier comments on the inapplicability of a reactor QA program to fuel cycle licensees.

Procedure 88010 – Operator Training/Retraining

Part 19 operator training is prescriptive in nature and inspections should be “compliance-based.” Training of individuals to perform administrative control functions should, in contrast, be risk-informed. So long as the inspector is clearly instructed what training is to be inspected (Part 19 or Part 70), a proper allocation of NRC inspection resources should result. As discussed in Attachment One, allocation of a majority of the inspection resources to the Part 70 training adequacy will be far more useful than simple compliance-based inspection of Part 19 requirements.

There is very poor correspondence between the Inspection Requirements (§02) and the Inspection Guidance (§03) sections of the IP and it is not clear how the two are linked. See other IPs, such as IP88005 or IP880XX, to see how the guidance is specifically referenced to an inspection requirement. A major rework of this IP is needed, as a result.

There is no guidance offered in IP88010 to meet the §02.02(a) inspection requirement (training of individuals to perform IROFS administrative functions), or

how the graded approach would function in their training. This major omission must be addressed in a major re-write of this IP.

The English expression used throughout in this IP needs tightening up to avoid confusion. There is, for example, confusing use of “regulatee” and “licensee” whereas consistency in terminology is needed (e.g. compare the introductory IP NOTE and the Inspection Objective section for the first instance of this problem). Asserting that administrative controls should be “...*available and reliable to perform its intended function...*” (§02.02a) is somewhat puzzling as it is an individual (rather than a procedure) that performs the task. A revised IP for NCS training inspections (IP88015) was not included in the package of draft revisions for review. As IP88015 and IP88010 will likely overlap, these two IPs should be jointly reviewed to ensure that they are consistent and do not replicate one another to any unreasonable extent.

§02.02(b): inspection of nuclear criticality safety is covered in IP88015 and should be deleted from this IP88010.

§03.01(a)(3): expectations that an operator should be required “...*to the extent within the workers’ control to observe Commission regulations and licenses...*” seems to be far too high-level. What does “*to the extent within the workers’ control*” mean? Instruct the operators in safe operating procedures and allow the licensees to address commission regulations.

§03.01(4): the expectation that an operator would know all Commission regulations and license conditions is unreasonable (“...*report promptly to the licensee any condition which may lead to or cause a violation of Commission regulations and licensees...*”).

§03.01(b) & 03.02: confusing use of ‘licensee’ and ‘regulatee’

§03.03(e): this section states that “...*refresher training should be provided at least every two years, or as specified in the facility license or certificate...*’

Considering the annual GET training, quarterly criticality safety training (which many licensees are including in Integrated Safety Refresher training) and the biennial review, adequate training should already be available.

§03.05: what is specified in the first sentence is not appropriate for managers and supervisors. Revise. The meaning of the last sentence is unclear. In such an event, workers shall stop the process and notify their supervisors.

Procedure 8801X – NCS Program

As discussed at the Atlanta workshop, IP8801X and IP8801Y require major revisions and the NRC has agreed to prepare such revisions. Some additional comments on these IPs are noted below, but industry will await issuance of the revised NCS IPs before spending more time commenting on their appropriateness. The comments offered in NEI’s August 2nd assessment are reproduced along with some additional observations.

As written this procedure totally fails to acknowledge the existence of Subpart H. It lacks any regulatory references, has a structure that is inconsistent with other chapters, is deficient in the use of Part 70 ISA terminology (e.g. IROFS may possibly be “*control systems identified in safety analyses*”) and contains several example of confusing terminology. No references to safety-significance or the graded approach are provided to the inspector in selecting areas that should be inspected. Regulatory references remain un-cited and are too open-ended (unclear what regulatory requirements are being inspected against). The IP lays out programs and details that are different for each licensee, and many of these detailed expectations are inappropriate by lacking a regulatory basis. Inspections should be conducted against the regulations or facility-specific license commitments without imposition of new requirements by the IP. They should focus on risk-significant items and issues, and only those that have transpired since the last IP8801X inspection. Just because criticality safety is perceived as a high risk and because (by definition) a criticality accident results in high consequences does not mean that everything in the NCS program is high risk. There is considerable duplication of the inspection program in IP8801X with other IPs and room, therefore, for considerable simplification and efficiency gains. Finally, there is a serious mismatch between the inspection Requirements (§02) and the Guidance (§03) sections.

§01.01: there are many individuals identified as “*NCS specialists,*” “*NCSF staff,*” “*NCS analysts,*” “*NCS senior reviewers,*” “*NCS engineers,*” etc. Are these all one-in-the same? Consistency in personnel classifications would be useful.

§01.01(c): use of the word “each” could be an onerous problem, especially if “equivalent” process changes have no effect on safety as determined through the ISA analysis

§01.01(f): start this clause with a verb: “*Assure that NCS staff...*”

§01.01(h): “*NCS procedure violations*” is far too broad. Procedure violations are inevitable and will occur. Inspectors should focus on safety-significant violations and recurring violations as possibly indicative of training deficiencies. Focusing on trivial procedure violations should not be the purpose of an inspection.

§02.01(c): the last sentence of this section should be relocated to §02.01(b)

§02.02(a): why should the licensee’s engineers necessarily be involved in the documents’ preparation? They should only provide reviews of even sophisticated operations and engineering procedures that may have been written by others, including contractors.

§02.02(c): similar concern with the all-encompassing “*all*” terminology (see §01.01(c) above).. To what does “*all information*” pertain? Elaborate.

§02.03(d) & 03(e): Engineered or geometric controls should be preferred, when practicable. Use of administrative controls is clearly acceptable for certain situations (e.g., large margin, low likelihoods, low risk, etc.).

Justification for use of administrative controls should not be required; the adequacy of the designated administrative controls need only be demonstrated.

§02.04(a)(1): “...*report all detected violations of written NCS...*: the inspector should again be directed to focus on safety-significant violations. Same comment applies to the final sentence in this section (1).

§02.04(a)(2): “...*individuals having unescorted access...*: this probably means employees. Use simpler language?

§02.04(a)(3): is there really a need for a management representative to inspect areas where SNM is handled? Surely this work should be delegated to a technical expert engaged by the licensee. This section also erroneously states that annual inspections are required. This “requirement” is not found in any regulation or license commitment. The frequency should be risk-informed. Areas such as laundries may not need to be inspected on an annual basis. Which management representative are required – certainly not supervisors? What about their qualifications (see §04.04(b)).?

§02.04(b)(1) & (2) : This section is titled “*Audit Program,*” but the description of activities describe more of an “*NCS program appraisal*” rather than an audit. Audits are geared to compliance with requirements, but both paragraphs focus on demonstrating that the licensee is evaluating program adequacy. Sections (1) and (2) should be reversed to first ensure that an audit program is in place (current section (2)) and that it operates (current section (1)). After making this switch, delete the last two sentences from the (new) section (1), as it simply (and unnecessarily) repeats what is said in the new Section (2). One should also insert the word “any” in the phrase “...*corrective actions for any safety-significant violations of written requirements...*”, so as not to pre-judge that there actually will be any violations. Most licensees do not use the term “*teams.*” Correct this terminology error.

§02.04(c): this step appears to be establishing expectations that require NCS staff to conduct a “formal” review (i.e., concurrence) with proposed corrective actions is unnecessary. Corrective actions for a criticality limit violation will be either a correction to an inadequate NCS analysis/control, or a renewed commitment by plant managers that the existing limit will be complied with. In the first case, the corrective actions will be the responsibility of the NCS staff and in the second, the corrective actions will be the responsibility of the fissile material operations management. Regardless, NCS will be involved, but in the second case cited, it will be in a consultation role. Suggest replacing “*NCS staff*” with the term “*appropriate management.*”

§02.05(a): replace “...*control systems identified in safety analyses...*” by “*IROFS.*”

- §03.01: this section does not provide any guidance in the areas of “NCS guidance” or “independence,” both of which are included in the “*Inspection Requirements*” section. Again, there must be one-to-one correspondence between items in the Inspection and Requirements section of each Inspection procedure chapter.
- §03.01(a): the English expression in both sentences is very poor. For example, a program does not in itself develop procedures.
- §03.01(a)-(d): This section of guidance does not parallel the corresponding requirements section. Guidance should be provided for each of the items listed in the requirements section.
- §03.01(c): this section requires that individuals performing independent reviews of evaluations have “...*at least two years experience doing NCS evaluations and at least one year of experience at the company’s facility...*” This requirement does not exist in the regulations or in operating licenses. The amount of time in a position is not a good measure of competency or ability. The basis for this frequency seems to be highly arbitrary. The requirement should be that the licensee has a program with performance objectives that must be met before allowing second party review. This inspection item limits the ability of licensees to use contract engineers for performing some evaluations that are inherently simple. For example, evaluations of fissile material storage in single planar arrays or shelves are not very different from facility to facility. The use of contractors to perform and review these types of evaluations should not be precluded by this inspection procedure. Replace “*company’s*” by “*licensee’s*” for a facility need not strictly be operated by this type of business entity.
- §03.01(c) & (d): these are both sub-bullets for staff qualifications. Relocate.
- §03.02(a)-(e): this section does not parallel the corresponding requirements section (Administrative and Operating Procedures). The guidance portion needs to provide guidance for each of the items listed in the requirements section of this procedure.
- §03.02(b): poor English expression. Also, incorporate the term “IROFS.”
- §03.02(b): make reference to ISAs here.
- §03.02(c): item (4) leads the inspector to expect a particular organizational structure and reporting system. This inspection guidance should be more performance oriented. For example, requiring that the NCS staff evaluate abnormal events and report their evaluation to plant management is a very prescriptive requirement. A licensee could well have a program in which key plant management personnel are directly involved in the review of all abnormal events and who approve anticipated and actual corrective actions.
- §03.02(e): the second sentence has no meaning, and should be deleted. The final sentence should be relocated to §03.01(a) where this specific information would be useful.

- §03.03(a): this section does not parallel the corresponding requirements section. The guidance portion for Administrative and Operating Procedures needs to provide guidance for each of the items listed in the requirements section of this procedure.
- §03.04(a)-(h): this section is not parallel with the corresponding requirements section. The guidance portion for Administrative and Operating Procedures needs to provide guidance for each of the items listed in the requirements section of this procedure
- §03.04(a): the content of this section appears identical to that of §02.04a(2). Delete?
- §03.04(b): the last sentence of paragraph (b) should be relocated to paragraph (c). Also, the last sentence of paragraph (c) should be placed in paragraph (b), as it addresses the adequacy of IROFS.
- §03.04(c): the draft guidance leads the inspector to expect an activity at a frequency that is not required by regulation or by license requirements. The frequency of licensee inspections should be based on a “*risk-informed performance-based*” approach that considers safety importance. Many operations do not need a weekly or daily inspection. Some operations are not even performed weekly. Specific timeframes should not be specified. What is specified in the license or certificate will define the inspection frequency. The statement “*Operational inspections should be performed on a daily or weekly basis by staff familiar with the operations*” is unclear regarding who specifically is expected to perform this inspection and what their qualifications would have to be. What are operational inspections (must they be documented)? Should ensure this is not meant to be NCS staff.
- §03.04(h): establishing expectations that require NCS staff to conduct a review (implied “formal” review and concurrence) with proposed corrective actions is unnecessary. How does one “*confirm their adequacy*”? This guidance is unnecessarily restrictive. Explain.
- §03.05(b) & (c): “*controls*” and “*NCS control systems*” should refer to IROFS. The inspector should make comparisons of operations against what is stated in the ISA.

Procedure 8801Y – *NCS Safety Evaluations and Analyses*

As discussed at the Atlanta workshop, IP8801X and IP8801Y require major revisions and the NRC has agreed to prepare such revisions. Some additional comments on IP8801Y are noted below, but industry will await issuance of the revised NCS IPs before spending more time commenting on their appropriateness. The comments offered in NEI’s August 2nd assessment are reproduced along with some additional observations.

Regrettably, this IP makes absolutely no references to the Part 70 Subpart H modifications, including IROFS and the ISA. The IP is very prescriptive and compliance-based. That the IP requires consideration of equations and detailed calculations is quite inappropriate. The ISA will have already taken these into account (presumably the license was granted based on a prior analysis of the equations.) The IP seems to focus on counting safety controls and IROFS, and reads more like an SRP than an IP. So-called “*tertiary controls*” (§03.02(2), page 3) are bad and inappropriate. Rather than have the inspector reconstruct accident pathways (e.g. §03.03(c)), consultation with the on-site ISA should be encouraged. The repeated preaching that engineered controls are preferable to administrative controls seems unnecessary, especially in light of the pre-approval of the licensee’s ISA Summary (which includes approved IROFS). The inspector should be examining if the pre-approved controls are indeed in place, rather than initiating a re-analysis of the suitability of one control type over another.

A merging of IP8801X and 8801Y should be considered.

§01.01(a): one would normally assume that if a licensee meets regulatory requirements and license conditions, adequate criticality safety is provided. The last portion of this sentence implies, however, that this is not the case. This section should be deleted. (See IP83833, page 4, last paragraph, for an example of a good way to capture this type of objective).

§01.01(c): this section leads the inspector to expect that all criticality scenarios are identified and listed in the NCS evaluations. In reality, one can not possibly identify “all” scenarios. The regulatory requirement requires the licensee to just identify bounding scenarios. For example, a licensee may not identify all the possible mechanisms that could cause flooding and still have adequate protection against flooding. Use IROFS here.

§02.03(d): this section suggests that any time an administrative control is used, the evaluation should include a written explanation as to why an engineered control was not used. This is neither required by regulation nor by the operating licenses of most licensees.

§02.03(e): this section goes far beyond regulatory requirements by requiring “*control systems*” (presumably IROFS) for each accidental criticality pathway. This is incorrect. The guidance should direct the inspector to determine, where possible, that the double contingency principle is met, and where not possible, that sufficient diversity and redundancy is present so that it takes two unlikely independent and concurrent failures before accidental criticality is possible.

§02.05(a): the first sentence of this section is largely a repeat of §02.03e and isn’t really related to sub-critical margin. The discussion of double contingency (DC) leads the inspector to expect that DC is always

provided, when, in fact NUREG 1520 guidance specifically allows sufficient redundancy and diversity so long as it takes two unlikely independent and concurrent failures before accidental nuclear criticality is possible. Also, the last sentence leads the inspector to expect that each time an administrative control is used, a written justification for not having an engineered control present must be available in the evaluation. This is neither required by regulation nor by the operating licenses of most licensees. Subcritical Margin and the establishment of this margin is a license commitment and the inspection should focus on checking for compliance with this commitment to establish and use the appropriate sub-critical margin when calculating the allowed upper sub-critical limit.

§03.01: the definition of “*favorable geometry*” is confusing. Recommend substituting: “*a system whose dimensions and shape are such that a nuclear criticality event can not occur with any material that can credibly be inside the equipment.*” For example, a single 9-inch diameter tank constitutes favorable geometry in a facility that does not possess material enriched to more than 5 wt.% U²³⁵.

§03.02(a)-(f): this section does not parallel the corresponding Requirements section. The guidance portion for Administrative and Operating Procedures needs to provide guidance for each of the items listed in the requirements section of this procedure. The procedure would be improved if those items supporting “*appropriate limits and controls,*” “*Adequate Safety Margin,*” and “*Limits and Controls Make Sense for ease of Operation*” were grouped as sub-bullets under these main headings.

§03.02(d): the second sentence in this section should be deleted. This section runs counter to the “*risk-informed, performance-based*” regulation that the NRC is trying to implement. It leads the inspector to believe that he or she should pay closer attention to areas where more protection is provided than to those where less protection is provided to prevent an accident sequence. What exactly is a “*pseudo control?*” The inspector should be referred to the ISA Summary for a definition of unlikely.

§03.03(a)-(s): this section does not parallel the corresponding Requirements section. The guidance portion for Administrative and Operating Procedures needs to provide guidance for each of the items listed in the Requirements section of this procedure. The IP would be improved if those items supporting items (a)-(g) of the Requirements section were grouped as sub-bullets under the same main headings as listed in the requirements section.

§03.03(b): this paragraph leads the inspector to expect that one can identify all possible normal and abnormal states of a process. In actual practice, this cannot be done. The apparent focus on considering NCS in the event of an earthquake, tornado or flood seems misplaced. An

inadvertent criticality should be of secondary consideration in the event of a major natural phenomenon.

§03.03(d): this paragraph leads the inspector to expect that two “*control systems*” are present for each accident pathway. Rather than cause confusion by using “*control systems*” please consider using “*independent barriers*” for each potential accident pathway. The guidance seems to place undue emphasis on the number of controls (“...*two NCS control systems...as barriers,*” “...*two independent controls are shown to be operative...*”) versus two unlikely, concurrent and independent changes in process conditions. The overriding principle is that the operation shall be determined to be subcritical for all normal and credible abnormal conditions. The emphasis should be on maintaining subcriticality, as opposed to counting contingencies and IROFS.

§03.03(e): the second to last sentence leads the inspector to expect that each time an administrative control is used, a written justification for not having an engineered control present must be available in the evaluation. This is neither required by regulation nor by the operating licenses of most licensees.

§03.03(j), (k) and (n): each establishes “*safety limits*” for certain parameters. Rather than list these in the procedure, the inspector should be directed to the licensee’s operating license. Some of the ‘safety margins’ listed may not be consistent with existing operating licenses.

§03.03(l), (o), and (p): These items lead the inspector to expect certain controlled parameters are controlled by IROFS , while others are not. This is inconsistent and confusing. Why would one expect that density, for example, must be controlled by an IROFS, but enrichment control neutron absorption, and mass are not?

§03.04(a): this section does not provide guidance on meeting some of the items listed in the corresponding Requirements section (e.g. determining that NCS limits for controlled parameters are discussed with operating management and that operating management has agreed to and are implementing the limits and controls). This section also fails to provide any guidance on assuring that the reviews confirm that initial analyses and assumptions were realistic.

§03.05(a): this section touches on several issues that are not directly related to sub-critical margin. For example, start up conditions for new or revised processes and the establishment of multiple levels of system controls within a facility are extraneous. This section should be re-written to provide guidance that corresponds to a re-written §02.05. Additionally, this section leads the inspector to believe that a licensee will have a multi-tier control scheme which is neither required by regulation nor by operating licenses.

§03.06(a): this section does not provide guidance on meeting some of the items listed in the corresponding requirements section.

Procedure 8801Z – *Criticality Alarm Systems*

This procedure is compliance-based and the inspection is to be performed against the §70.24 requirements. We question the need to include all of the design and operational requirements for a CAAS in favor of providing some concrete guidance to NRC inspectors as to what actions should be taken to confirm the reliability and operability of the CAAS system. The design requirements would be important at the time of facility design, but they are of limited practical value for facility inspections. Presentation of specific, practical actions for the inspector to take to confirm the operability of the CAAS system, including management measures, etc. are appropriate and necessary. The structure of this inspection chapter should parallel that of other the requirements sections. The guidance portion for this procedure is good but would be improved with a more parallel structure

A Petition for Rulemaking will be submitted by NEI in the autumn of 2005 to risk-inform the prescriptive requirements that specify where criticality monitors shall be placed in a fuel cycle facility. Further detailed comments on IP8801Z will, therefore, be deferred.

§02.01(a): the last sentence that directs that areas containing any amount of fissile material must be monitored is incorrect. It would not, however, apply to areas containing less than 750 grams of U²³⁵. Correct to be consistent with the regulations.

§02.01(b): the description of system design feature requirements is inconsistent between this section and §02.04(a). The System Requirements in 02.01(b) states that “...*electronic logic requires that **one** detector be in the alarm mode before sounding the alarm...*”. However, 02.04(a) states “*Verify by observation, discussion, and document review that system design features include...that electronic logic requires that **two** detectors be in the alarm mode before sounding the alarm...*”. These requirements are contradictory. In addition, the construction of these sentences requires technical editing to clarify their intent.

§02.05(a): the statement: “...*fissile material areas or processes are covered by at least two detectors as demonstrated by sufficiently bounding and conservative assumptions and calculations...*” implies that calculations are needed to determine alarm coverage in all cases. Operations in areas that are limited to rooms of dimensions less than 100 feet and lacking any significant shielding materials are obviously covered by an alarm cluster anywhere in the room without the need for explicit calculations. Suggest deleting the phrase “*and calculations.*”

§03.01(c): the statement: “A *criticality monitoring system shall be maintained in all areas where special nuclear materials is handled, used or stored except at the Gaseous Diffusion Plants where a criticality monitoring system must be maintained in all areas of the facility*” should be re-worded to state: “A *criticality monitoring system shall be maintained in areas of the facility as required by the facility’s license or certificate.*”

§03.02(c) through (d): the content of these sections is unnecessarily specific and prescriptive. Inspections should be conducted in accordance with each licensee’s design basis. Suggest that these steps be deleted.

§03.02(c), (d) and (e): these three guidance items are unnecessarily prescriptive. Modify.

§03.02(g): most facilities do not have the ability to reset the criticality alarm from a location outside areas that require evacuation. There are also no requirements for this capability.

§03.03(a): the word “immediately” in the Inspection Objective is inconsistent with the word “promptly” in this section.

§03.03(b): the sentence at the end of this section regarding the set-point of the detectors is too specific and should be left to each licensee’s license or certificate. Similarly, in §03.03(c) the “one-half second” response time is too specific and should be left to each licensee’s license or certificate. Finally, the entire section 03.05 on Sensitivity should be deleted and left to what is specified in each licensee’s license or certificate.

§03.04(e) and (f): should accommodate the fact that the components of the alarm system will be designed and maintained as described in a licensee’s license or certificate. The ability of the components to withstand damage in case of fire, explosion, corrosive atmosphere, earthquake or other extreme conditions will be necessitated by the specific accident analysis performed for that operation or area. Design and installation of the system *should* (not shall) be such as to resist earthquake damage. This is consistent with the ANSI standard (ANSI/ANS-8.3).

§03.05(c): should not the unit be “*mrad/h*” rather than rad/h?

Procedure 88020 – Operational Safety

This should be the most important IP for the NRC. Regrettably, most of IP88020 is redundant, duplicates what is presented in other IPs, and seems to be more compliance-based than risk-informed (e.g. focus on housekeeping, following procedures). Industry recommends that IP88020 be significantly revised to strongly focus on the verification and validation of established safety programs.

On a positive note, the IP clearly states that the inspection should be performed against regulations and license conditions and that activities should focus on safety-significant issues that have arisen since the previous inspection.

- §01.03: this inspection activity (focus on IROFS) duplicates the effort of IP88005
- §02.01(b)(3): the terms *Safety Limit* and *Limiting Condition for Operation* (LCO) are used in this IP in a manner consistent with the regulations in 10 CFR 50.36. Fuel cycle facilities are generally licensed under 10 CFR 70 and there are no regulatory requirements for LCOs. There may be safety limits (lower case), but the language in the inspection procedure may need to be revised to remove suggestions that there is any requirement for LCOs and focus on process safety limits identified in the ISA Summary and any license conditions imposed on facility operation. Revise.
- §02.02(a): the statement to base the inspection on “...*plant activities...*” is inconsistent with the guidance elsewhere in the IP that directs inspectors’ attention to safety-significant operations. Revise.
- §02.02(b): this duplicates what is performed in the management measure IP88005. Revise. Add the term IROFS when speaking of safety controls, for these were designated as part of the ISA effort and are associated with higher-risk operations.
- §02.02(c)(4): this duplicates what is performed in the training IP88010. Revise.
- §02.03(d): this duplicates what is performed in the training IP88010. Revise.
- §02.03(e): this duplicates what is performed in the incident reporting section of IP88005. Revise.
- §02.04: this duplicates what is performed in the corrective action section of IP88005. Revise.
- §03.01(a)(4): the term “...*infrequently performed tests or evolutions (IPTEs)*...” is an undefined term for fuel cycle licensees. Add a definition for clarity.
- §03.01(b)(1)¶1 & 2: this duplicates what is performed in the operator training IP88010. Revise.
- §03.01(b)(2): this duplicates what is performed in the facility change process IP880XX. Revise.
- §03.01(b)(3): see identical comment for §02.01(b)(3) above regarding the use of the terms *Safety Limit* and *Limiting Condition for Operation (LCO)*.
- §03.02: for consistency with §02 terminology, the title of this section should read “*Observe Implementation of ISA, IROFS, SAR and NCSEs*”
- §03.02(b)¶1: this duplicates what is performed in the management measure section of IP88005. Revise.
- §03.02(c)¶1: add the term IROFS to the list of safety controls.

§03.02(d): this duplicates what is performed in the maintenance IP88005..
Revise.

§03.03(b): this duplicates what is performed in the operator training IP88010.
Revise.

§03.04(a): this duplicates what is performed in the Corrective Action Program
section of IP88005. Revise.

Procedure 88025 – Maintenance and Surveillance Testing

As discussed at the Atlanta workshop, IP88025 requires major revisions and the NRC has agreed to prepare such revisions. Some additional comments on this IP are noted below, but industry will await issuance of the revised IP before spending more time commenting on their appropriateness. The comments offered in NEI's August 2nd assessment are reproduced along with some additional observations.

This IP seems to have been written by personnel more familiar with reactor operations than fuel cycle facility operations. In fact, it appears that the author(s) have just copied a reactor maintenance inspection procedure, sprinkled in a few poorly-thought out references to IROFS, and assumed the IP would apply well to fuel cycle licensees. This is unacceptable. No references to safety-significance or the graded approach are provided to the inspector in selecting area that should be inspected. Inspections should be conducted against the regulations or facility-specific license commitments without imposition of new requirements by the IP. They should focus on risk-significant items and issues, and only those that have transpired since the last IP88025 inspection. There is considerable duplication of the inspection program in IP88025 with other IPs (especially IP8801Z and IP88005) and room, therefore, for considerable simplification and efficiency gains.

There is too great a resemblance to Part 50 requirements and concepts. For example, there is absolutely no regulatory basis for the requirements included in Appendix A. More seriously, there is an incomplete understanding of Part 70 shown by the IP author(s). For example, the ISA acronym is erroneously referred to as the "*independent safety analysis*" [§02.01(d)], thereby suggesting a limited knowledge of Part 70 by the IP author(s). Post-maintenance testing and calibrations are not specified by IROFS [§02.01(e)]. Calibrations do *not*, for example, "...*assure the availability and reliability of IROFS...*" [§03.02(b)]. The IP clearly misrepresents the exhaustive discussion and agreements on IROFS and IROFS components. Many of the inspection activities are duplicative of activities in other IPS, especially as they relate to management measures, operator training, criticality alarm monitoring and training. This unnecessary duplication of inspection activities must be eliminated. The overall level of complexity and formality in the maintenance inspection procedures is unwarranted for fuel cycle facilities. Maintenance is a very important management measure, but need not be

conducted in the highly structured manner that is implied in this IP. There is no acknowledgement of the “graded” concept that applies to maintenance activities.

IP88025 is so flawed and inapplicable to fuel cycle facilities that editorial and technical corrections will be insufficient to remedy the draft IP’s deficiencies. The authors who will draft the replacement IP should first acquire a sound understanding of the Subpart H requirements before attempting to draft the IP. A complete re-write is in order. NEI reproduces its preliminary comments of August 2nd:

§03.03: this section states “...if it has been determined that a programmatic review of the maintenance program is needed due to observed compliance issues, the inspector should perform an in-depth review of the program supporting the maintenance program including management systems, management support, audits and program reviews, training of maintenance personnel, and corporate policy and procedures affecting maintenance...” This approach and wording appears to be lifted from the reactor world. The ISA includes a graded approach methodology and Part 70 licensees are not expected to meet the same expectations as reactor licensees.

Procedure 88035 – Radioactive Waste Management

IP88035 is a well-written document that directs “compliance-based” inspections on regulations and licensee commitments. IT properly aligns with Part 20 and 61 requirements and focuses on the adequacy of licensee methods [e.g. §03.03] and programs for radwaste management. The only substantive comment we would make would be to direct the inspector to focus on any developments subsequent to the last IP88035 inspection, rather than to delve into years of historical data and practices.

§02.02¶1: suggest addition of the following words at the end of the text:
“...Appendix G to 10 CFR Part 20], if any, since the prior IP88035 inspection.”

Procedure 88045 – Environmental Protection and Effluent Control

IP88045 is also a well-written document that directs “compliance-based” inspections. The IP correctly directs inspectors to focus on changes since the previous IP88045 and to examine compliance with both the regulations (10 CFR 20, 10 CFR 70.59 and 40 CFR 190) and license commitments. Only a few minor editorial corrections are noted:

- §01.01: replace “*report*” by “*reporting*” to improve the English expression
- §01.02: the intention in this section is clear, but the English expression should be improved to better convey the intent of this objective.
- §01.03: this objective seems redundant for the inspection. Delete.
- §02 and §03: there is lacking a correspondence between the inspection Requirements of §02.01, §02.02 and §02.03 and corresponding Guidance. (In contrast, good alignment exists between the requirements and guidance for topics introduced in §02.04 and §02.05.) Such better alignment will assist an inspector in addressing specific topics.
- §03.01, line 5: changes to the program may be implemented to maintain, but not necessarily “enhance” its effectiveness. Recommend revising to read: “...*that the changes have maintained, or enhanced, the program...*”
- §03.02¶4: last line: insert a comma after “sample” so as to read: “...*magnitude different from a licensee sample, yet both could...*”
- §03.03, page 5: insert a period and create a new sentence so as to read: “...*and counting and evaluation of results. Discuss...*”
- §03.03(a)¶5 (base on page 5): it is quite unreasonable to expect an operator to be conversant with how the set points are established.
- §03.03(b)¶3, last sentence: this is *totally incorrect*. Biasing to the right of zero will indicate that releases are occurring, when none are, in fact, happening. The author(s) of this IP should consult NCRP Report #58, §7.1.3 for an explanation of how these negative numbers are to be handled. See also NUREG-1575, §2.3.5, section 1 for further guidance.
- §03.04 and §03.05: for consistency with the requirements of §02, the title of this section should be “*Radioactive Liquid/Airborne Effluents*”
- §03.06, line 8: suggest addition of a couple of words so as to read: “...*associated talks and through interviews with employees...*”

Procedure 88050 – Emergency Preparedness

The material in this IP is generally clear, but it contains much information that does not apply to every licensee. It is verbose. The IP reflects a “compliance-based” inspection approach, for the Subpart H regulations had little effect on emergency preparedness. There are several guidance items, for example §03.01, §03.02e, and §03.04¶2, that could better be addressed by directing the inspector to examine sections of the ISA rather than to conduct analyses from scratch. As such, some better alignment of the IP with the new Subpart H requirements would certainly benefit this IP. The IP correctly focuses inspector attention on changes to the Emergency Plan that have been made since the last IP88050 inspection (e.g. §02.01(a)).

The IP exhibits many grammatical errors that require attention. There are many double negatives and examples of confusing sentence structure that must be corrected. For example, §02.04(e) is very convoluted: “...*Determine whether by random selection, the agencies for which agreements are in effect are periodically contacted by the regulatee for training and taking part in drills or otherwise reviewing the plans in the agreements so that the agencies are familiar with their respective roles in emergency responses...*” Another puzzling example occurs in §02.06(a), final sentence: “...*verify that the kits contain appropriate quantity and number of dosimetry and survey instruments, which is operational and within calibrated...*” A few additional corrections have come to light:

§02.01(a): for clarity and to emphasize that the IP88050 inspections are to be conducted against regulations and license commitments, recommend changing “*NRC requirements*” – which could erroneously be interpreted to include various guidance documents – to read “*regulations*”

§02.01(a) and (e): these two requirements appear to be very similar. Consolidate?

§02.01(e), page 2: insert commas as follows: “...*and, if so, the regulatee has...*”

§02.02a(1): for consistency in terminology, insert “*Emergency*” before the word “*Plan*”

§02.02(c): the second sentence is incorrect. Most fuel cycle facilities do not have the ability to silence a criticality alarm from an external plant location. There are no regulatory requirements to silence an alarm from an external location. Revise this inspection requirement so as to not create new, and unjustified, licensee expectations.

§02.02(d): this requirement demands that postings be made, which may not be applicable to all licensees. Appropriate postings or other means (e.g. training, procedures) should be in place to convey the restrictions.

§02.02(d): this requirement is far too broad. Changes to the Emergency Plan need only be coordinated with off-site agencies if they impact the services to be provided by the off-site agencies. Many changes to the EP may never affect the off-site services. Insert some words to clarify this requirement: “...*determine whether any changes to the emergency preparedness program that may impact the services to be provided by off-site support groups and agencies have been properly coordinated with them...*”

§02.05(a): are all licensees bound by the requirement of quarterly communication checks? If not, then modify to agree with license conditions or commitments.

§02.05(d): for consistency with the rest of the IP, revise this requirement to read “...*past operational events since the last IP88050 inspection that required...*”

§02.06(a): correct the English in the last sentence (“...*survey instruments, which is operational and within calibrated.*”). It is unintelligible.

§03: in the first line of “*General Guidance*” remove the “s” from “describes”

§03.01: all of the requested investigations are contained in the ISA. The inspector should be directed to examine changes in the ISA that would have been made in support of the changes. With respect to hazardous materials, NRC jurisdiction only applies to hazardous chemicals produced from licensed material. Modify to be consistent with 10 CFR 70.64(a)(5).

§03.02(a): this guidance seems to be unnecessary and rather trivial in terms of importance as an inspection component.

§03.02(c): place a period after “*locations*”

§03.02e: this section is confusing and unclear as to its intent. The inspector should be directed to examine the ISA where all of the suggested analyses will already have been completed. Re-write. With respect to hazardous materials, NRC jurisdiction only applies to hazardous chemicals produced from licensed material. Modify to be consistent with 10 CFR 70.64(a)(5).

§03.02: in the Controlled Reentry paragraph, delete the guidance about the control of criticality alarms at external plant areas. [See comment above for §02.02(c)]. The meaning of the phrase “*recovery from a limit violation*” is unclear. To what does this refer? Clarification needed.

§03.04¶2, last sentence: the inspector should simply consult the ISA.

§03.05: for consistency with the language used in §02.05, the title of this guidance section should read: “Tests, Drills and Exercises”

Procedure 88051 – Evaluation of Exercises and Drills

IP88051 is generally well written and provides a good basis on which to evaluate the effectiveness of a licensee’s Emergency Plan. The IP reflects a “compliance-based” inspection approach, for the Subpart H regulations had little effect on emergency exercise and drills. The IP should better differentiate between exercises, which are not training-related, and drills, which are part of worker training. The correspondence between IP Requirements and corresponding Guidance is not clear (particularly compared to other IPs). Recommend copying the guidance item titles to the requirements in §02. A few minor comments follow:

§01.02: delete the word “*simulated*” for the procedures also apply to real events

§02.02: recommend one instance where the risk-informed nature of Part 70 regulations could be considered, and that is to focus inspectors on the most risk-significant emergency events. In the second sentence insert words so as to read: “...*Determine whether the exercise will use the most risk-significant accident scenarios postulated in the ISA for the site...*”

§02.06(e): all other items in this section start with nouns. Delete the words “*decide the*”

§03.03(d): believe "*IC*" should read "*ICP*"

§03.04(c): the last phrase added to this item (c) does not constitute a sentence. Re-write in a manner that parallels the second sentence in §03.05(b)

§03.05(d): replace "*between*" with "*among*." The former word addresses comparison on two items; the latter word addresses comparison amongst more than two items.

§03.09(e): suggest inserting the word "*member*" after "Team" for clarity