

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9710070029 DOC. DATE: 97/09/26 NOTARIZED: NO DOCKET #
 FACIL: STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Public 05000528
 STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Public 05000529
 STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Public 05000530
 AUTH. NAME AUTHOR AFFILIATION
 IDE, W. E. Arizona Public Service Co. (formerly Arizona Nuclear Power
 RECIP. NAME RECIPIENT AFFILIATION
 Document Control Branch (Document Control Desk)

SUBJECT: Forwards comments on NRC draft reg guides DG-1061, DG-1062,
 DG-1064, DG-1065 & NUREG-1602 re specific risk-informed
 applications.

DISTRIBUTION CODE: A047D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 39
 TITLE: OR Submittal: Inservice/Testing/Relief from ASME Code - GL-89-04

NOTES: STANDARDIZED PLANT 05000528
 Standardized plant. 05000529
 Standardized plant. 05000530

RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
PD4-2 LA	1 1	PD4-2 PD	1 1
THOMAS, K	1 1		
INTERNAL: ACRS	1 1	AEOD/SPD/RAB	1 1
<u>FILE CENTER 01</u>	1 1	NRR/DE/EMEB	1 1
NUDOCS-ABSTRACT	1 1	OGC/HDS2	1 0
RES/DET/EIB	1 1	RES/DET/EMMEB	1 1
EXTERNAL: LITCO ANDERSON	1 1	NOAC	1 1
NRC PDR	1 1		

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE. TO HAVE YOUR NAME OR ORGANIZATION REMOVED FROM DISTRIBUTION LISTS
 OR REDUCE THE NUMBER OF COPIES RECEIVED BY YOU OR YOUR ORGANIZATION, CONTACT THE DOCUMENT CONTROL
 DESK (DCD) ON EXTENSION 415-2083

TOTAL NUMBER OF COPIES REQUIRED: LTTR 14 ENCL 13

MAY



Palo Verde Nuclear
Generating Station

William E. Ide
Vice President
Nuclear Engineering

TEL 602/393-6116
FAX 602/393-6077

Mail Station 7605
P.O. Box 52034
Phoenix, AZ 85072-2034

102-04023- WEI/SAB/RKB
September 26, 1997

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-37
Washington, DC 20555-0001

- References:
1. Letter dated June 9, 1997, from James W. Clifford, NRC, to James M. Levine, APS, "Request for Additional Information - Risk-Informed Inservice Testing for Palo Verde Nuclear Generating Station."
 2. Letter No. 102-03987, dated August 1, 1997, from W. E. Ide, APS to NRC, "Response to Request for Additional Information Related to Risk-Informed Inservice Testing Pilot Program."
 3. 62 Federal Register 34321, dated June 25, 1997, "Use of PRA in Plant Specific Reactor Regulatory Activities: Proposed Regulatory Guides, Standard Review Plan Sections, and Supporting NUREG."

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Comments on NRC Draft Guidance Documents Concerning Risk-Informed Regulation

As part of the pilot program for risk-informed inservice testing (RI-IST), Arizona Public Service Company (APS) was specifically requested by the Nuclear Regulatory Commission (NRC) staff in Reference 1 to provide comments on draft Regulatory Guides DG-1061, "General Guidance" and DG-1062, "Inservice Testing (IST)," the associated draft standard review plan (SRP) sections, and draft NUREG-1602, "Use of PRA in Risk-Informed Applications." In Reference 2, APS committed to providing the staff with comments within the 90 day period allowed for public comment on these draft guidance documents. In Reference 3, the NRC published a Notice of Availability soliciting public comment on the draft documents above, as well as regulatory guides DG-1064, "Graded Quality Assurance," DG-1065, "Technical Specifications," and its companion SRP Chapter.

11
A047

000003



9710070029 970926
PDR ADDCK 05000528
P PDR

U.S. Nuclear Regulatory Commission

ATTN: Document Control Desk

Comments on NRC Draft Guidance Documents Concerning Risk-Informed Regulation

Page 2

APS has performed a detailed review of the draft guidance documents. In addition, APS has taken an active role within the industry in advancing the risk-informed decision making process. In the attached enclosures, please find APS' comments concerning the draft documents for the specific risk-informed applications.

The format of the enclosures is such that the comments are focused on the Draft Regulatory Guides. Where the same or a similar comment applies to an SRP section, it may not have been repeated. APS has the most notable concerns in the following three areas.

First is the issue of the numerical acceptance criteria proposed in DG-1061 (section 2.4.2.1). There are two concerns with this section.

1. The limits placed on core damage frequency (CDF) and large early release frequency (LERF) above which small risk increases will not be allowed are not appropriate. Palo Verde meets the proposed limits on CDF and LERF for an at-power internal events calculation. However, many existing power plants, including Palo Verde, currently have estimated CDF and LERF values above the proposed limits when the effects of fire and other external events are added to the calculation. Clearly a spectrum of CDF and LERF values is to be expected for existing plants due to differences in the design of the plants. However, inherently, any plant operating within the regulations and its current licensing basis is safe, regardless of the current calculated value of CDF and LERF for that plant. Small risk increases should be allowed for any plant operating within the regulations and its current licensing basis.
2. If the NRC is going to support the existence of plant specific safety goals, then the goals should be calculated on a plant specific basis from Level III analyses. If it is possible to determine generic CDF and LERF goals for the industry, then it is possible to develop site specific CDF and LERF goals for plants that have a Level III capability. If a plant does not wish to conduct a Level III analysis, then the generic limits could be used.

Second, the guidance proposed in these Regulatory Guides does not focus resources on more safety significant areas. This guidance would increase requirements for both High Safety Significant Components (HSSCs) and Low Safety Significant Components (LSSCs). The original purpose of using risk-informed applications was to focus resources on more important issues or equipment. The expectation was that there would be some relaxation on less important areas to allow for greater focus on areas deemed more important. It should be noted in the case of the IST program, given the proposed requirements, there may be very few LSSCs after the final categorization of components is performed specifically.



1. The expectation to create a performance monitoring and corrective action program for each risk-informed application is overly complex, unnecessary and adds significant work load. In addition, the specific requirements outlined in the Regulatory Guides focus extensively on LSSC performance and corrective action, contrary to the purpose of risk-informed regulation.

Regardless of the application, there should only be one performance monitoring program for Structure, System and Component (SSC) reliability and availability. The Maintenance Rule (MR) performance monitoring program provides the structure for effective performance monitoring of SSC's. If the current MR performance monitoring at a plant includes all functional failures, not just maintenance preventable functional failures, and the performance criteria are derived from a plant-specific PRA, then the current MR performance monitoring is an acceptable program. DG-1062 alludes to this, but then goes on to describe requirements for a much more elaborate program involving SSC performance characteristic monitoring and trending which MR performance monitoring does not meet.

Monitoring actual SSC performance characteristics (e.g., pump flow, vibration, pressure difference, pipe thickness, etc.) is application specific, and is performed in accordance with existing regulatory requirements. Additional testing, not currently under the regulatory umbrella, is performed on SSC's as part of current preventive and predictive maintenance programs. Enhancing current regulatory testing or bringing additional testing under the regulatory umbrella is not necessary to implement risk-informed regulation. In the specific case of IST, there is a clear attempt to take a testing program which was originally designed to assess operational readiness of components, and use the risk informed initiative to require "improved testing" that is capable of identifying SSC degradation prior to SSC failure (DG-1062, Sec. 5.2). This is an increase in regulatory requirements.

2. The proposed guidance in DG-1061 (Section 2.5, paragraph 7) for treating every functional failure of a SSC as a significant condition requiring a complete Root Cause of Failure Analysis (RCFA) and actions to preclude recurrence is overly conservative and burdensome. A large number of the components affected by these applications will by definition be LSSCs and complete RCFA should only be required when multiple failures indicate an adverse trend in component performance or when criteria defined by the performance monitoring program have been exceeded. If every failure is followed by a complete RCFA and corrective actions to preclude recurrence, then a performance monitoring program is unnecessary because the defined acceptable level of performance has defaulted to complete failure-free operation.

U.S. Nuclear Regulatory Commission

ATTN: Document Control Desk

Comments on NRC Draft Guidance Documents Concerning Risk-Informed Regulation

Page 4

The current requirements for a corrective action program, per 10 CFR 50 Appendix B, are adequate for application to risk-informed initiatives. The proposed guidance should assure that the licensee's current corrective action program: 1) identifies and corrects failures related to the proposed program change, and 2) establishes criteria for determining when a significant condition adverse to quality exists. Criteria used should be related to failure trends or repeat failures as opposed to treating each failure as a significant condition.

3. The proposed guidance demonstrates a lack of confidence that the PRA, in combination with the Integrated Decision Making Process (IDMP), is capable of determining which SSCs are more safety significant and that this process provides sufficient defense - in - depth. This lack of confidence is demonstrated by the additional requirements layered on the final categorization of components in the IST Program, such as:

- Hardened success paths
- Two HSSCs per cutset
- Key equipment for specific operational concerns not specifically modeled by the PRA (Shutdown Cooling, Fire, Seismic) should be categorized as HSSC.

On the basis that the IDMP works, the issue of defense - in - depth is not a concern.

Third is the issue of documentation requirements for each submittal (DG-1061, Section 3.3). The guidance would require an extensive review of the current licensing basis (CLB) for risk-informed applications, while CLB is not a defined term for Part 50 licensees. The guidance documents should be more specific regarding what should be reviewed as part of the CLB (i.e., current docketed IST program, etc.) While it is understandable that the staff needs a clear statement of how the CLB will change for each application, it should not be required on a component specific basis. It is also unnecessary to have the licensee reconfirm that the plant's design and operation is in accordance with its CLB as part of each submittal.

The requirement to include proposed changes and/or enhancements to the regulatory controls for SSCs which are not subject to any current requirements is another example of added burden on licensees.

U.S. Nuclear Regulatory Commission

ATTN: Document Control Desk

Comments on NRC Draft Guidance Documents Concerning Risk-Informed Regulation

Page 5

Section 3.3 of DG-1061 implies that an Individual Plant Examination (IPE) - type submittal is necessary for each application. For APS, this would result in the need to create an extensive summary document, on the order of 1000 pages, to describe the PRA used to perform the analysis. This is a burdensome documentation requirement. It would be cost prohibitive for the licensee to have the NRR staff review this document. It would be more reasonable for the licensee to maintain the PRA documentation available for NRC inspection. In other areas, it is unclear how much documentation is necessary. Guidance on the degree of detailed documentation required for the expert panel process is specifically needed.

APS believes that the issues presented above are the most significant issues requiring resolution prior to the draft documents becoming usable. Significant changes to these draft documents may be required. Thus, following any modification to the draft Regulatory Guides, SRP Chapters and NUREG-1602, APS strongly recommends a second comment period to allow further industry review. Should the above issues not be resolved, the added burden outweighs the benefits associated with implementing risk-informed initiatives.

APS appreciates the staff's request to provide comments on the draft documents. It is APS' intention to provide meaningful constructive support to the risk-informed decision making process.

Should you have any questions, please contact Scott A. Bauer at (602) 393-5978.

Sincerely,



WEI/SAB/RKB/mah

Enclosures:

- 1) Comments on DG-1061 and Draft SRP Ch. 19
- 2) Comments on DG-1062 and Draft SRP Ch. 3.9.7
- 3) Comments on DG-1064
- 4) Comments on DG-1065 and Draft SRP Ch. 16-1
- 5) Comments on NUREG-1602

cc: E. W. Merschoff
K. E. Perkins
K. M. Thomas
J. H. Moorman
D. C. Fischer

ENCLOSURE 1

COMMENTS ON

DRAFT REG. GUIDE 1061

AND

DRAFT STANDARD REVIEW PLAN CHAPTER 19

CONCERNING

**AN APPROACH FOR USING PROBABILISTIC RISK
ASSESSMENT IN RISK-INFORMED DECISIONS ON
PLANT-SPECIFIC CHANGES TO THE CURRENT
LICENSING BASIS**



Comments for Draft Guide 1061

Section Number:	General Comment
Summary or Excerpt:	PRA Quality
Comments:	No attempt is made in any of the documents to define the quality of PRA required for each application. NUREG 1602 acknowledges that the quality of the PRA depends on the application, but provides no help in determining the requirements on an application specific basis. Guidance should be provided.

Section Number:	1.1:
Summary or Excerpt:	The Commission's safety goals for nuclear power plants and subsidiary numerical objectives are to be used with appropriate consideration of uncertainties in making regulatory judgments on the need for proposing and backfitting new generic requirements on nuclear power plant licensees.
Comments:	The Commissions safety goal policy was developed after the licensing of most plants in the U.S. It is likely that many existing plants do not individually meet the subsidiary numerical objectives, especially the CDF goal of 1.0×10^{-4} . Yet, inherently, any plant that is operating within the regulations and its current licensing basis is safe. This inherent conflict must be resolved prior to the application of any criteria from the safety goal policy on a plant specific basis. To use an arbitrary CDF goal that many plants do not currently meet as the basis for proposing new generic requirements places many plants in the position where they are considered both safe but not safe enough. This is a conflict that can only lead to confusion. In judging the acceptability of proposed changes to a plants licensing basis, small risk increases should be allowed for any plant operating within the regulations and its current licensing basis.

Section Number:	2.4.2.1 Acceptance Guidelines
Summary or Excerpt:	Entire Section
Comments:	<p>There are two problems with this section.</p> <p>First is the limits places on CDF and LERF above which small risk increases will not be allowed. Clearly a spectrum of CDF and LERF values is to be expected from one plant to another due to differences in the design of the plants. But, inherently, any plant that is operating within the regulations and its current licensing basis is safe, regardless of the current calculated value of CDF and LERF for that plant. Small risk increases should be allowed for any plant operating within the regulations and its current licensing basis.</p> <p>Second is the reluctance to use Level III information in the regulatory decision process. If the Commission is going to support the existence of plant specific safety goals, then they should be calculated on a plant specific basis from the Level III analyses. If it is possible to determine generic CDF and LERF goals for the industry, then it is possible to develop site specific CDF and LERF goals at plants that have a level III capability. If a plant does not wish to conduct a Level III analysis, then the generic limits could be used.</p>

Section Number:	2.4.3 Integrated Decision-Making
Summary or Excerpt:	Entire Section
Comments:	There is very little in this section in terms of the specific expectations related to this part of the process. Expectations related to the repeatability and scrutability of the process and the specific membership and documentation requirements should be provided.

Section Number:	2.5 Element 3: Define Implementation and Monitoring Program
Summary or Excerpt:	An implementation plan should be developed to ensure that any unexpected problems and deficiencies are detected and corrected prior to becoming a significant safety problem. Broad implementation within a limited time period may be justified when uncertainty in the results of supporting evaluations (probabilistic and / or traditional evaluations) is shown to be low. whereas a slower , phased approach to implementation would be expected when uncertainty in the evaluation results is higher. When programmatic changes are being made (such as IST, ISI, graded QA), the potential introduction of common cause effects must be fully considered and included in the submittal.
Comments:	This NRC requirement should be made more flexible by allowing for alternative monitoring approaches for cases where the originally planned approach is determined to be ineffective.

Section Number:	2.5 Element 3: Define Implementation and Monitoring Program
Summary or Excerpt:	Entire Section
Comments:	<p>The expectation to create a performance monitoring program for each risk-informed application is overly complex.</p> <p>Regardless of the application there should only be one performance monitoring program for SSC reliability and availability. The Maintenance Rule performance monitoring program provides the structure for effective performance monitoring of SSC failures. If the performance monitoring includes any function failure, not just maintenance preventable functional failures and the performance criteria is derived from a plant specific PRA, then the maintenance rule performance monitoring is an acceptable program and the reg. guide should state this.</p> <p>Monitoring actual SSC performance characteristics is application specific, and in most cases is performed in accordance with existing program requirements. Enhancing these test methodologies should not be required to implement risk-informed regulation. The applicable requirements are currently adequate.</p>

Section Number:	2.5 Element 3: Define Implementation and Monitoring Program
Summary or Excerpt:	Entire Section
Comments:	<p>The current requirements for a corrective action program, per 10 CRF 50 Appendix B, are adequate for application to risk-informed initiatives. The proposed guidance should : 1) verify that failures related to the proposed change are captured by the current corrective action program and 2) that conditions are appropriately classified as significant conditions adverse to quality. The proposed guidance (paragraph 7) of treating every functional failure of a SSC affected by an application as a significant condition requiring a complete root cause and actions to preclude recurrence is overly conservative. Components affected by these applications will by definition be Less Safety Significant Components and complete root cause should only be required when multiple failures indicate an adverse trend in component performance or when performance monitoring criteria defined by the performance monitoring program have been exceeded. If every failure is followed by a complete root cause determination and corrective actions to preclude recurrence, then a performance monitoring program is unnecessary. The defined acceptable level of performance has defaulted to failure free operation. This increase in regulatory expectation could compromise any expected benefits from proceeding with such a program.</p>

Section Number:	2.6 Element 4 Submit Proposed Changes
Summary or Excerpt:	Submittal to the NRC of a CLB change should provide information required by the relevant regulation, and when risk-informed analysis is submitted, it should meet the guidance of section 3 of DG 1061. Also, if risk-informed analysis is not submitted, and the CLB change is supported only by what goes beyond currently-approved NRC staff positions, then the NRC staff may request risk-based support.
Comments:	When a change to CLB is supported only by what goes beyond currently-approved NRC staff position, the NRC staff may request risk-based support. This staff practice is somewhat contradictory to the voluntary nature of applying risk-informed analyses which is repeatedly emphasized by the NRC. A submittal for CLB change that is adequately supported by analyses (other than risk-based) should be evaluated by the staff on its own merit regardless of whether similar cases with similar support were previously approved. This allowable staff practice should be deleted from the Reg. guide.

Section Number:	2.6: Element 4 Submit Proposed Changes
Summary or Excerpt:	When SSCs with high risk significance are identified that are not subject to regulatory requirements, or that which is not commensurate to their risk level; it is expected that licensee will propose CLB change(s) to add regulatory requirements commensurate with the risk significance of these identified SSCs.
Comments:	It is not clear exactly what changes are expected. Could this include, for instance additional Technical Specifications, etc.?

Section Number:	2.7 Quality Assurance:
Summary or Excerpt:	PRA used to support CLB changes will have been subject to quality control by: 1) utilize personnel qualified for the analysis, 2) utilize procedures that ensure control of documentation, 3) maintain records, 4) provide independent audit function to verify quality, and 5) utilize procedure that ensure appropriate attention and corrective actions for previous decisions that are in error.
Comments:	The last NRC-defined characteristic of a PRA subject to quality control is the utilization of procedure(s) to ensure appropriate attention and corrective action(s) for previous decisions that are determined to be in error. This characteristic should be clarified as applicable only to ongoing processes and tasks that require attention and correction(s). There is no benefit in reviewing old decisions that are no longer in effect. Should these old decisions be reinstated, they will automatically benefit from the latest update in PRA model.

Section Number:	3.3 Licensing Submittal
Summary or Excerpt:	Entire Section
Comments:	This section seems to imply that an IPE type submittal is necessary for each application. This is too much documentation. The only reasonable approach is for the licensee to maintain this documentation available for NRC inspection.

Section Number:	Appendix B:
Summary or Excerpt:	Section in general
Comments:	This section contains a definition of LERF that is appropriate for plants that have not performed a Level III PRA. Licensees that performed a level 3 PRA, by default, have a clearer definition of LERF due to the conditional level 3 consequence results. This insight should be factored into the level 2 PDS/CET tree for grouping purposes once a level 3 model is developed. This approach should be factored into the Reg. Guide.

Comments for SRP Chapter 19

SRP Section Number:	Appendix B
Summary or Excerpt:	N/A
Comments:	Heavy reliance on the PRA and specific examples of how the PRA is used in the areas of defense-in-depth and safety margins is provided but no specific guidance or examples are given for the deterministic evaluations.

SRP Section Number:	Appendix A
Summary or Excerpt:	N/A
Comments:	What is the basis for the factor of 3 and what is the standard we are to use for comparison?

ENCLOSURE 2

COMMENTS ON

DRAFT REG. GUIDE 1062

AND

DRAFT STANDARD REVIEW PLAN CHAPTER 3.9.7

CONCERNING

**AN APPROACH PLANT SPECIFIC, RISK-INFORMED,
DECISION MAKING: INSERVICE TESTING**

Comments on DG-1062

Section Number:	1.5 Relationship to the Maintenance Rule (MR)
Summary or Excerpt:	Component monitoring that is performed as part of the Maintenance Rule implementation can be used to satisfy monitoring needs for RI-IST, and for such cases, the performance criteria chosen would be compatible with both the Maintenance Rule requirements/guidance and the RI-IST guidance provided herein.
Comment:	MR monitoring establishes performance criteria for availability and reliability of systems and/or trains. Actual plant performance is then monitored against these criteria. The performance monitoring requirements outlined in section 5.2 appear to require component level availability and reliability trending as well as component performance characteristics trending to identify degradation. As it is set up today, the MR would not meet the performance characteristic trending requirements of Section 5.2 or of the current codes or the code cases before the ASME committee. There would be considerable work required to synchronize these two programs.

Section Number:	1.6 Relationship to the Proposed Data Rule .
Summary or Excerpt:	<p>The data would be compiled by the NRC in a centralized database. The definitions and information requested are intended to be sufficient to qualify the database for regulatory applications of probabilistic risk assessment (PRA) that fall within the limitations of the data, e.g., RI-IST programs.</p> <p><u>Licensees that choose to implement RI-IST programs will be expected to use such plant-specific data, in conjunction with their plant-specific PRA, to help categorize components into the two IST component groups, i.e., low-safety-significant components (LSSCs) and high-safety-significant components (HSSCs).</u> Information gained about the types of failures that occur will also help define the appropriate testing strategies for the two groups of components. In addition, these data will help to improve the accuracy of plant-specific PRA estimates of changes in plant risk projected to result from changes in IST programs.</p>
Comment:	<p>What is meant by "...that fall within the limitations of the data.."? </p> <p>It remains unclear to what degree the staff is expecting the use of plant specific data and or generic data. Does this (underlined section) mean data is used to feedback into the PRA or just evaluated deterministically.</p>

Section Number:	2.2.1 Define Proposed Changes to the Inservice Testing Program
Summary or Excerpt:	<p>In this element, the licensee should identify the particular components that would be affected by the proposed changes in testing practices. This would include those components currently in the IST program and possibly some that are not if it is determined through new information and insights such as the PRA that these additional components have importance for plant risk. Specific revisions to testing schedules and methods should be described. <u>Plant systems and functions that rely on the affected components should be identified.</u></p>
Comment:	How should this be done? Guidance throughout refers to preserving the assumptions of the PRA. Are the IST functions assigned by the CLB the ones of interest, or those functions identified by the PRA or both?

Section Number:	2.2.2. Conduct Engineering Evaluation
Summary or Excerpt:	<u>During the integration of all of the available information, it is expected that many issues will need to be resolved through the use of a well-reasoned judgment process often involving a combination of different engineering skills.</u> This activity has typically been referred to in industry documents as being performed by an "expert panel." As discussed further at the end of this chapter and in the appendix, this important process is the licensee's responsibility and may be accomplished by means other than a formal panel. In any case, the key safety principles discussed in this guide must be addressed and shown to be satisfied <u>regardless</u> of the approach used for RI-IST program decision making.
Comment:	Collecting, assembling and evaluating this information in a documentable, scrutable and repeatable fashion will be extremely challenging however the integrated evaluation is handled. Replace "irregardless" with "regardless".

Section Number:	2.2.2
Summary or Excerpt:	<u>In the planning stages of the program, PRA results may be used to categorize components into LSSC and HSSC groupings. After a plan has been developed, a calculation is made using the plant-specific PRA to evaluate the effect of the planned program changes on the plant risk as measured by core damage frequency (CDF) and containment large early release frequency (LERF).</u> The risk evaluation should explicitly consider the affected IST components to the extent that it is feasible to model them in the PRA. The necessary scope of the PRA depends upon the particular systems as well as modes of operation that are affected. Draft Regulatory Guide DG-1061 contains extensive guidance regarding the engineering evaluation, including acceptance guidelines for projected risk change. Additional application-specific details concerning RI-IST programs and Element 2 are contained in Chapter 4 of this guide.
Comment:	This section is confusing, consider this: <ul style="list-style-type: none"> Grouping of components is an iterative process. Numerical results from the PRA should be used in conjunction with deterministic information to initially categorize components into LSSC and HSSC groupings. A second PRA calculation is made to evaluate the effect of the planned program changes (i.e. interval extension of LSSCs) as measured by the change in core damage frequency (CDF) and containment large early release frequency (LERF). (This is sometimes referred to as an aggregate risk evaluation) <p>Information is very fragmented through references to other documents. Consideration should be given to minimizing external document references.</p>

Section Number:	2.2.3 Develop Strategies for Implementation, Performance Monitoring and Corrective Action Strategies
Summary or Excerpt:	In this element, plans are formulated that ensure that component reliability is maintained commensurate with the component's safety significance. The planned conditions for operation should be consistent with the assumptions in the PRA analysis to ensure that the PRA results reflect the expected plant behavior. Both testing intervals and methods should be specified, and, to the extent practicable, <u>the testing methods should address the relevant failure mechanisms that could significantly affect component reliability.</u> In the event that component failures occur during the RI-IST program, guidance for evaluating the need for, and the implementation of, corrective action should be included in the plans. Specific guidance for Element 3 is given in Chapter 5.
Comment:	Guidance throughout refers to preserving the assumptions of the PRA. What if the relevant failure mechanisms (those modeled in the PRA) are in conflict with the CLB (those tested by the current IST program)? What if the failure mechanisms are not adequately "testable" by current code methodology?

Section Number:	2.2.4 Document Program Proposal
Summary or Excerpt:	The final element involves preparing that documentation to be included in the submittal and that to be maintained by the licensee for later reference (i.e., archival) if needed. The submittal will be reviewed by the NRC according to the standard review plans given in SRP (NUREG-0800) Chapter 19 and Section 3.9.7 (References 6 and 7 respectively). Documentation requirements for RI-IST programs are given in Chapter 6 of this draft regulatory guide. In carrying out this process, the licensee will need to make a number of decisions based on the best available information. Some of this information will be derived from traditional engineering practice and some will be probabilistic in nature resulting from PRA studies. It may be that certain issues discussed in this guide are best evaluated through the use of traditional engineering approaches, but for other issues, PRA may have advantages. <u>It is the licensee's responsibility to ensure that its RI-IST program is developed using a well-reasoned and integrated decision process that considers both forms of input information (traditional engineering and probabilistic), including those cases in which the choice of direction is not obvious.</u> Examples of this latter situation are when there is insufficient information to make a clear decision or if the PRA results appear to disagree with the traditional engineering data. This important decision making process may at times require the participation of special combinations of licensee expertise (staff), depending on the technical and other issues involved, and may at times also need outside consultants. Industry documents have generally referred to the use of an expert panel for such decision making. The appendix to this guide discusses a number of IST-specific issues such as might arise in expert panel deliberations.
Comment:	This paragraph describes a process yet says little about how to document it. Perhaps this paragraph belongs more appropriately in section 2.2.2.

Section Number:	3.1 Description of Proposed Changes
Summary or Excerpt:	(1) An identification of the aspects of the plant's CLB that would be affected by the proposed RI-IST program. To provide a basis from which to evaluate the proposed changes, the licensee should also confirm that the plant's design and operation is in accordance with its CLB.
Comment:	It's unnecessary to have the Licensee reconfirm that the plant design and operation is in accordance with its CLB as part of each regulatory submittal.
Summary or Excerpt:	An identification of the components in the plant's CLB that are both directly and indirectly involved with the proposed testing changes. Any components that are not presently covered in the plant's IST program but are determined to be important to safety (e.g., through PRA insights) should also be identified. In addition, the particular systems that are affected by the proposed changes should be identified since this information is an aid in planning the supporting engineering analyses
Comment:	This is an open ended request that is not clearly defined. What does it mean to have components "indirectly involved"? Clearer definition of the expectation is required. If what the staff is asking for is a summary of the proposed changes to the CLB and the components that are directly affected by the proposed change, then Palo Verde agrees. If what the staff is asking for is an exhaustive review of the CLB and a detailed description of all elements whether or not they are affected by the change, then Palo Verde does not agree.

Section Number:	3.2.2
Summary or Excerpt:	Changes to component groupings, test intervals, and test methods that do not involve a change to the overall RI-IST approach where the overall RI-IST approach was reviewed and approved by the NRC do not require specific (i.e., additional) review and approval prior to implementation provided that the effect of the changes on plant risk increase is insignificant.
Comment:	Shouldn't this reference acceptance guidance in DG-1061 (like 2.4.2.1?)

Section Number:	3.2.2
Summary or Excerpt:	Changes to the RI-IST program that involve programmatic changes (e.g., changes to the <u>plant probabilistic model assumptions</u> , changes to the grouping criteria or figures of merit used to categorize components, and <u>changes in the acceptance guidelines used for the licensee's integrated decision making process</u>) require NRC approval prior to implementation.
Comment:	What kind of changes to the probabilistic model assumptions would require prior NRC approval? Wouldn't that mean making the PRA a licensing commitment? What kind of process would the staff want to see every time a change is made? (i.e. If a valve is added, or if its direction of stroke changed?; The details of how to change a valve from HSSC to LSSC, or just overall guidelines of the process?)

Section Number:	3.2.2 (fifth paragraph)
	Component test method changes will typically involve the implementation of an applicable ASME Code or code case (as approved by the NRC) or published NRC guidance. Changes to the component test methods for these situations do not require prior NRC approval. However, test method changes that involve deviation from the NRC approved code requirements do require NRC approval prior to implementation.
Comment:	Move this Paragraph to second bullet under 3.2.2, or delete it. It appears redundant to that paragraph as well.

Section Number:	3.2.2
	In its submittal, the licensee will include a proposed process for determining when formal NRC review and approval are or are not necessary. As discussed, once this process is approved by the NRC, formal NRC review and approval are only needed when the process determines that such a review is necessary, or when changes to the process are requested.
Comment:	This is a good idea, is a flow chart an acceptable explanation?

Section Number:	4.1 Traditional Engineering Evaluation
Summary or Excerpt:	This part of the evaluation is based on traditional engineering methods (not probabilistic). Areas to be evaluated from this viewpoint include the potential effect of the proposed RI-IST program on design basis accidents, defense-in-depth attributes, and safety margins. <u>As indicated above, defense-in-depth and safety margin should also be evaluated, as feasible, using risk techniques (PRA).</u>
Comment:	Why is this mentioned in a paragraph labeled "Traditional Engineering Evaluation"?

Section Number:	4.1.1 Evaluating the Proposed Changes to the Current Licensing Basis
Summary or Excerpt:	A broad review of the CLB may be necessary. Proposed IST program changes could affect requirements or commitments that are <u>not explicitly stated</u> in the licensee's safety analysis report. Furthermore, staff approval of the design, operation, and maintenance of components at the facility have likely been granted in terms other than probability, consequences, or margin of safety. Therefore, it may be more appropriate to evaluate proposed IST program changes against other more explicit criteria (e.g., criteria used in either the licensing process or to determine the acceptability of component design, operation and maintenance).
Comment:	It is not clear what would be acceptable to the staff to really implement this requirement.



P

1

1

1

1

1

1

1

1

1

1

1

Section Number:	4.1.1 Evaluating the Proposed Changes to the Current Licensing Basis
Summary or Excerpt:	The sources of information for the traditional engineering part of the evaluation should include the IST plan information, including component functions from the design-basis documents, references to relevant plant licensing commitments, and approved relief requests. <u>On a component-specific basis</u> , the licensee should identify each instance where the proposed IST program change will affect the CLB of the plant and document the basis for the acceptability of the proposed <u>change by explicitly addressing each of the key safety principles</u> . If the CLB is not affected by the proposed IST program changes, the licensee should indicate this in its RI-IST program description.
Comment:	Other than just assuming that all affected areas had been identified, an exhaustive CLB search would be required. This presumes a basis document for the IST program which is not currently required. The <u>"explicitly addressing each of the key safety principles"</u> needs to be deleted. This is very labor intensive. At Palo Verde the evaluation could be done by valve group, but even so it would involve almost 200 valve groups (based on function size, and type).

Section Number:	4.1.2 Inservice Testing Program Scope
Summary or Excerpt:	To preserve the PRA assumptions which contribute to supporting the proposed RI-IST program, the PRA should also be used to evaluate RI-IST program test requirements (test interval and methods) as well as practicable. Consequently, for the IST components within the scope of the proposed RI-IST program, the licensee should examine the test strategies currently in place to evaluate the test strategy effectiveness, and where appropriate, modify the test strategy.
Comment:	In the original "vision" of this program, scope reductions were not considered. In retrospect, scope reductions should be allowed, or an "insignificant" category should be considered. This Reg. Guide completely ignores a whole category of components: Those LSSCs modeled, but not in the current program. In "preserving the PRA assumptions" aren't these components by default more important than those LSSCs which were not modeled at all? Do they at least warrant ranking by the expert panel?

Section Number:	4.1.3 Inservice Testing Program Changes
Summary or Excerpt:	In establishing the test strategy for LSSC components, the licensee should consider <u>component design, service condition, and performance, as well as risk insights</u> . The proposed test interval must be supported by both generic and <u>plant-specific</u> failure rate data, and the <u>test interval should be significantly less than the expected time to failure of the SSC in question</u> .
Comment:	<ul style="list-style-type: none"> Design, service condition and risk insights can be considered on group basis. This is still a lot of information to accumulate and document, BUT valve performance translates into over 1500 valves for Palo Verde. How much specific plant data is enough? ".. the test interval should be significantly less than the expected time to failure of the SSC in question.." What is "significantly less"? What if the expected time to failure is 40 years+ based on specific plant data? <p>This high level of effort focused on LSSCs is not consistent with the concept Risk Informed programs.</p>



Section Number:	4.1.3 Inservice Testing Program Changes
Summary or Excerpt:	Licensees choosing to pursue RI-IST programs should consider the adoption of enhanced test strategies developed with ASME risk-based IST Code cases endorsed by the NRC (or the revised ASME Code after the risk-based Code cases get incorporated into the Code and endorsed by the NRC). Deviations from endorsed Code cases (or revised ASME Code) <u>should</u> be reviewed and approved by the NRC staff via relief requests prior to implementation.
Comment:	Change "should" to a "shall"

Section Number:	4.1.3 Inservice Testing Program Changes
Summary or Excerpt:	For components that the licensee proposes to place in the HSSC category and that are not in the licensee's current IST program, the following conditions should be met. These components should be tested in accordance with the ASME Code cases (or revised ASME Code), including compliance with all administrative requirements. Where ASME Section XI or O&M Code testing is not practical, alternative test methods should be developed by the licensee to ensure operational readiness and to detect component degradation (i.e., degradation associated with failure modes identified as being important in the licensee's PRA). As a minimum, a summary of alternative test methods should be reviewed and approved by the NRC as part of this review and prior to implementation of the RI-IST program at the plant.
Comment:	Reduction in the current testing scope should also be allowed based on the Integrated Decision Making Process.

Section Number:	4.1.3 Acceptance Guidelines - Changes to Test Interval Only
Summary or Excerpt:	b) The effectiveness of the current IST program in determining the capability of the component to carry out its intended function should be assessed. <u>Test intervals should only be extended for components that are tested using methods that have the capability to detect component degradation associated with the important failure modes and causes identified in the plant's PRA.</u>
Comment:	The original intent of code testing was to demonstrate operational readiness not detect component degradation. This implies that for LSSCs its necessary to implement a more sophisticated method of testing than is currently required by the code. There appears to be little perceptible difference between changes to interval (only) and the next paragraph (changes to interval and test method). Both options appear to require the evaluation of test effectiveness.

Section Number:	4.1.3 Acceptance Guidelines - Changes to Test Interval and Method
Summary or Excerpt:	A process should be used to develop an appropriate test strategy for IST components. For the HSSC components this process should involve the following activities.
Comment:	It is unlikely that any facility will attempt to develop these processes themselves. Is it the staff intention that no SER will be given until ASME develops guidance?

Section Number:	4.1.3 Acceptance Guidelines - Changes to Test Interval and Method
Summary or Excerpt:	These tasks may be accomplished through the ASME Code Cases (Refs. 10 and 14) if approved by the NRC. If a licensee proposes to change both IST intervals and IST methods, then the process used by the licensee to categorize components should identify components whose test strategy should be more focused as well as components whose test strategy might be relaxed. Extensions to test intervals should be made step-wise.
Comment:	This is what licensees will wait for.

Section Number:	4.1.4 Relief Requests and Technical Specification Changes
Summary or Excerpt:	On a component-specific basis, the licensee should identify each instance where the proposed RI-IST program change is not consistent with the guidance given above. In each such case, the licensee should document the basis for the acceptability of the proposed difference.
Comment:	This whole process still sounds like relief on a component by component basis, rather than an approval of a process/framework, allowing the Licensees to make changes within that framework

Section Number:	4.2 Probabilistic Risk Assessment
Summary or Excerpt:	In addition, the FV and RAW importances of <u>all</u> components are required to identify instances in which increased attention (IST or other programs such as technical specifications) might be warranted.
Comment:	Does the staff really mean "all", considering not all components are modeled?

Section Number:	4.2.1 Probabilistic Risk Assessments for Inservice Testing Applications
Summary or Excerpt:	The development of a RI-IST program will require that plant-specific PRA information be available to identify those <u>IST</u> components that contribute most significantly to the plant's estimated risk. Components covered should include the following.
Comment:	Delete "IST". The PRA identifies components outside the existing scope. The rest of the paragraph alludes to this.

Section Number:	4.2.1 Level of Detail of the PRA
Summary or Excerpt:	Safety-related components that are relied on to remain functional during and after design-basis or beyond design basis events to ensure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, and the capability to prevent or mitigate the consequences of accidents that could result in potential off site exposure comparable to 10 CFR Part 100 guidelines.
Comment:	This is the way to scope the PRA and IST programs, but this encompasses more than is currently required. It is an example of how the PRA is used to increase requirements (in scope), but never decrease them (get rid of those components which really don't contribute to plant risk).

Section Number:	4.2.1 Level of Detail of the PRA
Summary or Excerpt:	Non-safety-related components - Whose failure could cause a reactor scram or actuation of a safety-related system
Comment:	- These are outside the scope of RI-IST per section 4.1.2 of this Reg. guide.

Section Number:	4.2.1 Level of Detail of the PRA Acceptance Guidelines
Summary or Excerpt:	The components in the proposed RI-IST program are included in the PRA model, or reasons why they are not modeled are justified and documented in terms of the potential effect on the plant's risk.
Comment:	This is a labor intensive task. These components may not be specifically identified in the PRA documentation and may require separate effort to compile and present in a suitable fashion for a submittal.

Section Number:	4.2.1 Level of Detail of the PRA Acceptance Guidelines
Summary or Excerpt:	- All components in the proposed RI-IST program for which credit is taken regarding the plant's accident response capability are shown to be within the scope of programmatic activities (IST, GQA, ISI, maintenance, monitoring).
Comment:	Does this mean the scopes have to be the same? Or does it mean that a component must fall within at least one of the scopes of these programs?

Section Number:	4.2.3 Categorization of Components
Summary or Excerpt:	- <u>While categorization is an essential step in defining how the RI-IST will be implemented, it is not an essential part of ensuring the maintenance of an acceptable level of plant risk.</u> As described in Section 4.2.5, the sensitivity of risk importance measures to changes in IST strategy (i.e., proposed for RI-IST) can be used as one input to overall understanding of the effect of this strategy on plant risk. However, the traditional engineering evaluation described in Section 4.1 and the calculation of change in overall plant risk described in Section 4.2.5 provide the major input to the determination of whether the risk change is acceptable or not.
Comment:	Replace the underlined with a statement such as: "Assessing the change in overall plant risk resulting from the proposed change is an essential element in this program."

Section Number:	4.2.5 Evaluating the Effects of the Proposed Changes on Plant Risk
Summary or Excerpt:	An assessment of the overall or cumulative effect of all proposed changes in plant design and operation on plant risk is critical to determining the acceptability of the changes. This guide addresses acceptable methods for assessing risk changes associated with IST program changes, however, if changes in graded quality assurance or technical specifications are also being considered, the integrated effects of all of these proposed activities should be evaluated.
Comment:	This implies that an integrated risk management (IRM) program be in place prior to implementation of any (more than one?) application. IRM is in an early stage of development at most facilities and will generate its own set of difficult issues and questions which will need to be dealt with prior to actual implementation of any of these applications.

Section Number:	4.3 Demonstration of Conformance with Key Safety Principles Defense in Depth
Summary or Excerpt:	As stated in Draft Regulatory Guide DG-1061, General Design Criteria, national standards, and engineering principles such as the single failure criterion are to be considered. Assurance that this criterion is met is when:
Comment:	This section seems to imply if the following bullets are met, defense in depth is "met", this needs to be reconciled with section A.3. It says hardened success paths are required. See comments there. It is very prescriptive.
Summary:	<u>Assurance that this criterion is met is mainly demonstrated by showing that the codes and standards or alternatives approved for use by the NRC that are associated with IST and discussed in Section 4.1 are met.</u> The second means for demonstrating sufficient safety margin is a review of the safety analysis acceptance criteria in the CLB (e.g., updated safety analysis report (UFSAR), supporting analyses) showing that these criteria are still met for the proposed
Comment:	I thought 4.1 was the traditional engineering evaluation, but the "second means" (4.1.1?) seems to be the same thing. Neither 4.1 or 4.3 say enough to understand what specifically (and in what format) is required.

Section Number:	4.4 Integrated Decision Making
Summary or Excerpt:	This section discusses the integration of all of the technical considerations involved in reviewing submittals from licensees proposing to implement RI-IST programs. General guidance for risk-informed applications is given Draft Regulatory Guide DG-1061 (Ref. 3) and in the new SRP sections, Chapter 19 (Ref. 6) for general guidance, and Section 3.9.7 (Ref. 7) for IST programs. These documents discuss a set of regulatory findings that form the basis for the staff's writing an acceptable safety evaluation report (SER) for a licensee's risk-informed application. Specifically, Section 2.1 of Draft Regulatory Guide DG-1061 identifies a set of "expectations" that licensees should follow in addressing the key safety principles. Due to the importance of these findings, <u>certain</u> of them will be repeated here.
Comment:	Replace "certain" with "some".

Section Number:	4.4 Integrated Decision Making Necessary Findings
Summary or Excerpt:	Licensees are expected to review commitments related to outage planning and control to verify that they are appropriately reflected in the licensee's component grouping. This should include components required to maintain adequate defense in depth as well as components that might be operated as a result of contingency plans developed to support the outage.
Comment:	"Licensees should verify that IST components that play an integral role in the licensee's plans and procedures for maintaining the key shutdown safety functions identified in NUMARC 91-06 are in high safety significant component groups" This sentence has changed (and been deleted altogether in this case) in several different revisions of this document. At any rate, it is another example of "hardened" success paths that are contrary to the use of PRA as a tool to focus on the most safety significant SSCs.

Section Number:	5.1 Program Implementation
Summary or Excerpt:	The RI-IST program should distinguish between LSSCs and HSSCs for testing intervals. Components that are being tested using specific ASME Codes, NRC-endorsed Code cases for RI-IST programs, or other applicable guidance should be individually identified in the RI-IST program. The test intervals of the HSSCs should be included in the RI-IST program for verification of compliance with the ASME Code requirements and applicable NRC-endorsed ASME code cases. Any component test interval or method which is not in conformance with the above should have an approved relief request for that component. <u>Plant corrective action and feedback programs should be appropriately referenced in the IST program and implementing and test procedures to ensure that testing failures are fed back to the plant expert panel and IST coordinator for reevaluation and possible adjustment to the component's grouping and test strategy.</u>
Comment:	It's unnecessary for this document to prescribe specific elements of the corrective action process. Wording should reflect the general requirements of 10CFR50. App B criterion 16. It is not likely that test failures would be fed back directly to the group responsible for integrated decision making process (referred to here as the EP) Failures should be periodically reflected in the failure rates used by the PRA which may then change a component from one ranking to another (i.e. LSSC to HSSC)

Section Number:	5.1 Program Implementation
Summary or Excerpt:	It is acceptable to implement RI-IST programs on a phased approach. Implementation of interval extension for LSSCs may begin at the discretion of the licensee. Implementation may take place on a component, train, or system level because extension of the test interval for these components (i.e., either individually or as a group) will have already been demonstrated through PRA and associated sensitivity analysis to have a minimal impact on the figures of merit.
Comment:	Palo Verde likes the flexibility of the phased-in implementation on a component, train or system level. This may need reconciliation with the ASME approach which tries to avoid "cherry picking"

Section Number:	5.1 Program Implementation
Summary or Excerpt:	A majority of components contained within plant IST programs are exercised or operated for reasons other than inservice testing such as during normal plant operations and as a result of other component inservice testing. The remaining components are exercised only during IST. An exercise of a component as part of a system test or normal operations does not constitute an inservice test because it provides little or no information on component degradation. However, depending on the system test or plant activity and the extent that the component is exercised, assurance can be gained that the component operated at the time of the test. While this provides little or no information on component degradation, it does provide some assurance that any degradation that may have occurred was not significant enough to degrade the system function.
Comment:	The purpose of this paragraph is unclear. It doesn't make any active statement for what exercising can or cannot be used.



10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

10-10-10

Section Number:	5.1 Program Implementation
Summary or Excerpt:	<p>An acceptable method to extend the test interval for LSSCs that are exercised as a result of plant operations and other testing is to group like components and stagger their testing equally over the interval identified for a specific component based on the probabilistic analysis and deterministic evaluation of each individual component. Component grouping should also consider valve actuator type for power operated valves and pump driver type, as applicable.</p> <p><u>With this method, generic age-related failures can potentially be identified while allowing immediate implementation for some components.</u> LSSCs which are exercised only during RI-IST should have their intervals extended by gradually stepping out the current and successive test intervals until the proposed extended test interval established by the licensee in their engineering evaluation is attained. Then, these low LSSCs should be tested on a staggered basis. The selected test frequency for LSSCs that are to be tested on a staggered basis should be justified in the RI-IST program.</p>
Comment:	<p>Is grouping/staggering recommended/required <u>only</u> for those valves exercised as a result of other than IST testing? The two types of valves here are those only tested during IST and those tested in IST but also operated/tested as a function of other plant activities. It appears like the staff is recommending different treatments for each type of valve, but it is unclear what the difference is, or why it should be different.</p> <p>The underlined section assumes that current and proposed test methods will be capable of detecting degradation. Current methods do not have this capability and it is not clear why adding this capability is necessary to implement a RI-IST program.</p>

Section Number:	5.1 Program Implementation Acceptance Guideline
Summary or Excerpt:	<p>For LSSCs that will be tested at an interval greater than the Code test interval, which are not exercised as a result of plant operation or testing of other components, the licensee should increase the test interval successively in a step-wise manner until the components are tested at the maximum proposed test interval provided these components have acceptable performance histories. <u>If no age-dependent failures occur, then the test interval can be gradually extended until the component, or group of components if tested on a staggered basis, is tested at the maximum proposed extended test interval.</u></p>
Comment:	<p>This underlined section assumes that the age of a component is related only to the IST test interval. It is not. It is related to the component maintenance history, including Preventative Maintenance and Corrective maintenance.</p>

Section Number:	5.2 Performance Monitoring
Summary or Excerpt:	The purpose of performance monitoring is to help confirm that the failure rates assumed for this equipment remain valid, and that no insidious failure mechanisms which are related to extended test intervals become important enough to alter the failure rate assumed in the PRA models. The important criteria must be measurable and the test frequency must be sufficient to provide meaningful data. In addition, the testing procedures and analysis must provide assurance that performance degradation is detected with sufficient margin that there is no adverse effect on public health and safety (i.e., the failure rates cannot be allowed to rise to unacceptable levels before detection and corrective action take place).
Comment:	In general this guidance infers test methods for LSSCs which lie outside the ability of the current code methods for detecting degradation. This in turn infers the development of such tests which can be an immense task. This is an example where the emphasis appears to be on the LSSCs. The following questions arise: <ol style="list-style-type: none"> 1. Why isn't it acceptable to confirm failure rates by allowing the plant specific data over a period of time for LSSCs to be updated? Why does it have to be a separate deterministic effort? 2. What if important criteria are not measurable? What if a stroke time on a valve is the best information you can get? What if test method differences can't be established between HSSC and LSSC (i.e. check valves)? 3. What is meant by "test frequency must be sufficient to provide meaningful data"? Is sufficient: <ul style="list-style-type: none"> • What is statistically significant? • Performed frequently enough? (How often?) • Or sufficient test history?

Section Number:	5.2 Performance Monitoring
Summary or Excerpt:	A performance monitoring program should be included as part of the licensee's RI-IST program if extending the test intervals for LSSCs is proposed. This program must provide assurance that components placed on the extended test interval will continue to perform as assumed in the PRA, and that any performance degradation is detected and corrected before the extended test program is fully implemented. <u>The program should also include monitoring similar component performance at other plants to establish a sufficient data base of temporal related degradation.</u> Testing procedures should detect degradation in component performance and ideally would replicate, as much as practical, actual demand conditions.
Comment:	Is this implying that in addition to the plant specific failure rate data used in the PRA, additional review of other facility data is required? This is not a reasonable request. There is no way to ensure access to other plant's data.

Section Number:	5.2 Performance Monitoring
Summary or Excerpt:	- The test is devised such that incipient degradation can reasonably be expected to be detected, and
Comment:	If the current code test does not detect incipient degradation then why should the proposed program for LSSCs?

Section Number:	5.2 Performance Monitoring
Summary or Excerpt:	The licensee trends appropriate parameters as required by the ASME Code or ASME Code Case and as necessary to provide validation of the PRA.
Comment:	What if the tests cannot validate the dominant failure mechanisms shown by the PRA?

Section Number:	5.2 Performance Monitoring Acceptance Guidelines
Summary or Excerpt:	The acceptance guidelines for this item consist of evaluating the licensee's proposed performance monitoring process to assure that it responds to the attributes listed in the preceding discussion. Assurance must be established that degradation is not significant for components that are placed on an extended test interval, and that failure rate assumptions for these components are not compromised by test data. It must be clearly established that sufficient testing is provided as part of the program to provide significant data, and that the test procedures and evaluation methods are implemented which provide reasonable assurance that degradation will be detected. <u>Trending as appropriate should be performed by comparing parameters measured during RI-IST programs with the same parameters measured during the original IST programs.</u>
Comment:	What if they no longer trend the same parameters? Enhanced testing may well trend more effective parameters, why continue collecting useless data?

Section Number:	5.3 Feedback and Corrective Action
Summary or Excerpt:	If component failures or degradation occur at a higher rate than assumed in the basis for the RI-IST program, the following basic steps should be followed to implement corrective action:
Comment:	No apparent differentiation is made between LSSC and HSSC corrective action programs. Palo Verde suggests both "apparent cause" and "root cause" determinations. The corrective action for an LSSC and HSSC should not be the same. This is not focusing resources on HSSCs.

Section Number:	5.3 Feedback and Corrective Action
Summary or Excerpt:	- The assumptions and failure rates used to categorize components according to risk should be reevaluated to determine if component importance rankings have changed.
Comment:	Again, for LSSCs, the failure rates should be "fed back" during data updates to the PRA only. Not on an individual basis

Section Number:	5.3 Feedback and Corrective Action
Summary or Excerpt:	- The equipment test effectiveness templates should be reevaluated, and the RI-IST program should be modified accordingly.
Comment:	What is a "template"? If these are implemented by code case, then it is unlikely that the Licensee will make any changes to the test methods.

Section Number:	A.3 Specific Areas To Be Evaluated
Summary or Excerpt:	- Each safe-shutdown function, such as reactivity control, reactor coolant system integrity, coolant inventory control, primary system heat removal, etc. (or use the Appendix R safe-shutdown function paths), should retain one system that is considered more safety significant with pump and valve testing planned accordingly. In other words, a minimum set of high safety significant equipment should be operable to maintain defense-in-depth.
Comment:	Hardened success paths are in conflict with what the PRA tells us is important. The current IST program scope is in essence based on hardened success paths. This is overly restrictive and not necessary to address defense-in-depth.

Section Number:	5.4 Periodic Assessments
Summary or Excerpt:	Adequate program implementation requires that the RI-IST program results be predicted, monitored, and fed back into several key steps of the program development process.
Comment:	It is clear from this section that this periodic monitoring feedback is not the same as the PRA update. It is also fairly certain that it is not the 10 year update required by the code. It is also clear that it is not an emergent type of feedback (e.g. following a major plant modification, or significant equipment performance problem.) It implies there are several feedback mechanisms needed. It is not clear what type of feed back mechanism is being requested and on what frequency it is expected.

Section Number:	5.4 Periodic Assessments
Summary or Excerpt:	(Plant-specific data by itself cannot be the sole basis to determine component operability because the statistics will not be sufficient. Therefore, the RI-IST PRA model must also reflect industry experience.)
Comment:	If this means combining generic data and plant specific data through a Bayesian update, can it explicitly say that? What is the envisioned source for updated generic data.?

Section Number:	6.2.3 Categorization of Inservice Testing Components
Summary or Excerpt:	In this section, the techniques used to categorize the RI-IST components should be discussed. When available, results from the categorization of the components from different viewpoints should be provided (e.g., traditional engineering analysis, probabilistic, and integrated). The technique used should be described including an identification of specific importance measures when used. The final results from the categorization should be presented in either one of two categories, high or low (i.e., HSSC or LSSC). <u>The rationale used in the integrated decision making process to place components in either category should be described for each component.</u>
Comment:	In how much detail does the decision criteria used in the integrated decision process need to be described? What information should be then provided for each component?

Section Number:	6.2.6 Systems and Components Pertinent to IST
Summary or Excerpt:	Systems to be considered should include the pertinent portions of all systems credited in the plant-specific probabilistic analysis.
Comment:	There are a significant number of components in those portions of the systems which are modeled but may not be in the current IST program. This could also be interpreted to exclude any component in the current program which is not modeled. (Excludes a significant portion of the LSSCs)

Section Number:	6.2.6 Plant Operating Experience
Summary or Excerpt:	Summarize any events involving pump and valve failures that have occurred at this plant or similar plants. Include in this summary any lessons learned from these events and indicate actions taken to prevent or minimize recurrence of the events.
Comment:	Is this all failures for the life of the plant? This is a very time consuming task and it is not clear what the value of this information is to the NRC. It should be deleted.

Section Number:	6.2.6 Operating Procedures
Summary or Excerpt:	Present and describe the important operator actions as defined by existing procedures associated with events involving pump and valve failures. The descriptions should include what the operator is supposed to do and when it must be done. The conditions under which the operator takes each action, the expected time for performing the action, and how the time was derived should be identified. A summary of training materials associated with pump and valve failure events should be supplied. Include in this summary a synopsis of any simulator exercises associated with such events.
Comment:	This is again, a large amount of information with no clear intended use. It should be deleted.

Section Number:	6.4 Performance Monitoring Program
Summary or Excerpt:	- Number of starts (or cycles) that each RI-IST component was subjected to under operational conditions and under test conditions.
Comment:	This is not physically possible. This data does not exist and in some cases cannot be collected.

Section Number:	6.6 Implementation Plans and Schedule
Summary or Excerpt:	The licensee's implementation plans should be provided, including a proposed schedule for initiating the program pending NRC approval. The phased implementation plan should state the composition of the component groupings for the staggered test strategy which are of <u>the same type, size, manufacturer, model, and service conditions</u> . Their staggered frequency over the test interval should also be included. Components should be identified that are to have their test intervals extended. The final test interval (at the maximum extended interval) of these components should also be included in the submittal.
Comment:	This wording is very prescriptive. Consider the wording in ASME OMA Code-1996, ISTC 4.5.4.C.(1)

Section Number:	A.3 Specific Areas To Be Evaluated
Summary or Excerpt:	Each safe-shutdown function, such as reactivity control, reactor coolant system integrity, coolant inventory control, primary system heat removal, etc. (or use the Appendix R safe-shutdown function paths), should retain one system that is considered more safety significant with pump and valve testing planned accordingly. In other words, a minimum set of high safety significant equipment should be operable to maintain defense-in-depth.
Comment:	Hardened success paths are in conflict with what the PRA tells us is important. There are other ways to address defense-in-depth issues.

Section:	I. DEFINE THE PROPOSED CHANGE TO THE IST PROGRAM
Summary:	The staff is expecting a CLB review on a component specific basis. This regulatory guide adopts the 10 CFR Part 54 definition of current licensing basis. That is, "Current Licensing Basis (CLB) is the set of NRC requirements applicable to a specific plant and a licensee's written commitments for ensuring compliance with and operation with in applicable NRC requirements and the plant-specific design basis (including all modifications and additions to such commitments over the life of the license) that are docketed and in effect. The CLB includes the NRC regulations contained in 10 CFR Parts 2, 19, 20, 21, 26, 30, 40, 51, 54, 55, 70, 72, 73, 100 and appendices thereto; orders; license conditions; exemptions; and technical specifications. It also includes the plant-specific design-basis information defined in 10 CFR 50.2 as documented in the most recent final safety analysis report (FSAR) as required by 10 CFR 50.71 and the licensee's commitments remaining in effect that were made in docketed licensing correspondence such as licensee responses to NRC bulletins, generic letters, and enforcement actions, as well as licensee commitments documented in NRC safety evaluations or licensee event reports."
Comment:	To perform this task on a component specific basis will be labor intensive. Especially to put the information together in an auditable format appropriate for this type of submittal. The NRC has not defined CLB for an operating Part 50 licensee (only Part 54, license renewal). This review encompasses far more than was expected and will be a labor intensive task.

Section:	III.A.1 ENGINEERING EVALUATION
	1. Evaluation of Proposed Changes to the Current Licensing Basis
Summary or Excerpt:	Furthermore, staff approval of the design, operation, and maintenance of SSC at the facility may have been granted in terms other than probability, consequences, or margin of safety. Therefore, it may be more appropriate to evaluate proposed IST program changes against other more explicit criteria (e.g., design basis criteria used in either the licensing process or to determine the acceptability of SSC design, operation, and maintenance):.
Comment:	In the context of a risk-informed Reg. guide, this statement seems out of context. It seems to be saying that a risk-informed analysis is not appropriate. It is unclear how the staff expects a comparison to be made between "more explicit criteria" and the proposed changes, when they, as the staff states, are fundamentally different in nature.

Section:	IV.A. 1. Evaluation of Proposed Changes to the Current Licensing Basis
Summary:	This section states that components which play a key role in Shutdown Cooling safety functions should be HSSCs.
Comment:	This should be deleted. The Integrated Decision Making Process should determine the category in which to place components.

Section:	II.A.2 IST Program Scope
Summary or Excerpt:	Entire section
Comment:	<p>There appears to be a inconsistency in how the staff purports to use the PRA. Scope definition is an example of this. From the statements made regarding preservation of the PRA assumptions, one gets the impression that the staff truly believes that the PRA captures the equipment important to the safe operation of the plant. However, when one gets to the "nuts and bolts" of implementing the requirements set forth in the SRP and RG, one gets the sense that the staff does <u>not</u> have confidence that equipment important to safe operation has been captured.</p> <p>-There are only additions to scope, no reductions. ASME class 1,2,3 components should not be included automatically, but be evaluated according to their risk significance just like the rest of the components.</p> <p>-The scope definition completely ignores the treatment of modeled LSSCs, not included in the traditional IST scope. Some of these <u>may</u> be more important than <u>some</u> of the unmodeled, traditional scope LSSCs. Yet the latter are addressed extensively throughout the guidance.</p> <p>-The guidance forces components into the HSSC category:</p> <ul style="list-style-type: none"> • Hardened success paths • All key components used for Shutdown Cooling (SDC), Fire • Two HSSCs per cutset <p>Palo Verde suggests requiring that all these components get evaluated in the Integrated Decision Making Process and allow <u>that</u> process to determine what is HSSC and LSSC, and perhaps to add and subtract components from the scope.</p>

Section:	III.A.3 IST Program Changes
Summary or Excerpt:	The staff suggests that the Licensee resubmit relief requests and proposed alternatives, along with risk-related insights for NRC staff review and approval.
Comment:	Palo Verde understands that previously approved relief requests and alternatives should be reviewed in light of risk insights, but the Licensee should make the decision on what to resubmit. If the request is not affected by the proposed change, then it should not be resubmitted for approval.
Summary or Excerpt:	The staff proposed two alternatives here: b) Changes to Test Interval (Only) and c) Changes to Test Interval and Methods.
Comment:	Ultimately both alternatives ask for an involved evaluation of test methods for both LSSCs and HSSCs. This doesn't leave much difference between the two alternatives. The pilot submittals have proposed that test methodology should be dictated by the ASME not by the individual Licensee.
Summary or Excerpt:	In establishing the test interval for low safety significant components, the licensee should consider component design, service condition, and performance as well as risk insights.
Comment:	Palo Verde is prepared to consider valve type and performance in establishing test intervals for LSSCs. In special cases, service condition (especially if it is impacting performance significantly) can be considered. But to consider design, condition, manufacturer and model (the latter two are suggested elsewhere in the guidance) in grouping these components is cumbersome and far beyond what ASME currently requires in the code. Furthermore, while all of this may be appropriate for components which are the subject of more focused tests (HSSCs), it is hard to justify it for LSSCs.

Section:	II.B.2 Performance Monitoring of IST Equipment
Summary or Excerpt:	Performance monitoring of IST equipment refers to the monitoring of test data for equipment that has been placed on an revised test strategy (e.g., extended test interval). The purpose of the performance monitoring is to help confirm that the failure rates assumed for this equipment remain valid, and that no unexpected failure mechanisms which are related to revised test strategy become important enough to alter the failure rate assumed in the evaluation models
Comment:	<p>The guidance suggests a monitoring program which is much more complex than originally conceived by the pilot plants, particularly for the LSSCs. Palo Verde understands the necessity to assure that failure rate assumptions are correct, however the method suggested by the staff is cumbersome at best. The pilots have suggested a monitoring program for LSSCs which is similar to the monitoring currently endorsed by the code. The major difference is that the intervals are extended. It is Palo Verde's intent to collect failure data much like it currently does for LSSCs. This specific plant data will be used to Bayesian update failure rates used in the PRA. To require anything beyond this for LSSCs is not in keeping with idea of focusing resources on more important equipment.</p> <p>Palo Verde interval extension will not go beyond the Mean Time To Failure (MTTF)</p>

Section:	II.B.3 Feedback and Corrective Action Program
Summary or Excerpt:	The staff has suggested a corrective action program that closely follows a traditional corrective action program for both LSSCs and HSSCs.
Comment:	<p>The guidance does not make any differentiation in the treatment of LSSCs and HSSCs. Palo Verde's submittal suggests that an "apparent cause" evaluation is made for an LSSC. This is <u>not</u> casual treatment of a failure, but it is also not a full blown Equipment Root Cause of Failure Analysis (ERCFA). An ERCFA is an extremely time and resource intensive process which may be appropriate for HSSCs, but not for LSSCs. Palo Verde also intends to use the INPO's EPIX program to trend SSC reliability. The corrective action program for LSSCs would be entered when adverse trends are identified.</p>
Summary or Excerpt:	<p>The staff adds a few requirements to account for the risk nature of the program.</p> <p>(f) assess the validity of the PRA failure rate and unavailability assumptions in light of the failure(s), and</p> <p>(g) consider the effectiveness of the component's test strategy in detecting the failure or nonconforming condition. Adjust the test frequency and/or methods, as appropriate, where the component (or group of components) experiences repeated failures or nonconforming conditions.</p>
Comment:	<p>The type of evaluation suggested by (f) and (g) above imply something done at the time of the failure. Palo Verde suggests that the assessment of failure rates be done on a periodic basis (like during the PRA updates) for LSSCs.</p> <p>Adjusting the frequency of testing for failures is a viable option. However, changing test methods will not be possible, assuming that the Licensee will be adopting methods approved by ASME.</p>

Section:	III.B.4 Periodic Reassessment
Summary or Excerpt:	The test strategy for IST components should be periodically, at least once every two refueling outages, assessed to take into consideration results of inservice testing and new industry findings. Plant specific data by itself should not be the sole basis to determine component <u>operability</u> because the sample size will, in most cases, not be sufficient. Therefore, the IST PRA model should also reflect industry experience. (See Section III.A.8.c)
Comment:	Test strategies will be dictated by ASME. Unless the failure rates of components increases significantly (i.e. forces components from LSSC to HSSC category), test methodologies will not change. Replace "operability" with "reliability"

Section:	VI. RISK-INFORMED IST PROGRAM DOCUMENTATION
Summary or Excerpt:	Entire Section
Comment:	It remains unclear to Palo Verde what degree of documentation for the Integrated Decision Making Process is acceptable.

ENCLOSURE 3

COMMENTS ON

DRAFT REG. GUIDE 1064

CONCERNING

**AN APPROACH PLANT SPECIFIC, RISK-INFORMED,
DECISION MAKING: GRADED QUALITY ASSURANCE**

Comments on Draft DG-1064

Section Number:	General comment
Summary or Excerpt:	N/A
Comment:	<p>The Draft Reg. Guide is structured around four elements 1) Define the proposed QA program change, 2) Engineering evaluations, 3) Develop implementation and performance monitoring strategies, and 4) Document evaluations and submit request. APS implemented it's Graded QA program utilizing criteria provided in SECY 95-059 1) Process to identify SSC safety significance, 2) Application of QA controls based on safety function and significance, 3) Effective root cause and corrective action program, and 4) Operational feedback to assess QA controls and safety significance. APS believes that our implementation can satisfy the draft Reg. Guide but can be better understood using the SECY as guidance.</p> <p>As structured, the current draft Reg. Guide does not acknowledge the existing processes that exist to support other regulations and programs; e.g., Maintenance Rule. APS implemented it's Graded QA program utilizing, with minor changes, existing programs and processes. The draft Reg. Guide is currently written from a "ground up" approach as if these programs and processes do not exist. The draft Reg. Guide needs to rely upon and augment, when necessary, existing guidance. For example, the NUMARC guidance on Maintenance Rule has already been implemented by all licensees. In particular, Section 4 of the draft Reg. Guide should use/reference NUMARC 93-01 guidance rather than try to create new/separate guidance.</p>

Section Number:	General comment
Summary or Excerpt:	N/A
Comment:	<p>The draft Reg. Guide is written as if the process were static once systems/components are scoped. Some guidance as to what constitutes acceptable corrective actions resulting from an increase in risk significance is necessary. For example, a component is moved from low risk significant to high risk significant. Previous activities for this component have included installation of parts bought using the method for low risk significant applications. Is the part acceptable for continued use in the now high risk application without further evaluation or dedication testing?</p>

Section Number:	4.1 Safety Significance Categorization
Summary or Excerpt:	Entire Section
Comment:	<p>Draft Reg. Guide 1061 goes to some lengths to explain that one of the weaknesses in using importance measures in categorizing SSCs is the uncertainty in applying them at the system or train level. This Reg. Guide specifically suggests just such an approach, with little additional guidance on the performance of this evaluation. Either the methodology described here is to be considered weak and using it is questionable, or the characterization in 1061 is overly dramatic.</p>

Section Number:	4.1.2.2 Qualitative Safety Categorization Insights
Summary or Excerpt:	It would be prudent, and the licensee is expected, to designate at least one system associated with critical high level functions as high-safety-significant.
Comment:	This direction is overly prescriptive. Clearly, a system that represents only one of three ways to support a safety function is not as important as a system that uniquely supports a safety function. This distinction may be the basis for a categorization methodology that uses more than two levels of safety significance. A more reasonable requirement is that removal of all QA controls from systems that rank low quantitatively due to diversity of means to support the safety function is not prudent. Diverse systems may easily be treated better by placing them in a medium category. In the case where only one of a diverse set of systems is currently subject to quality controls, it may be better to put all of the systems under some controls than maintain the status quo with only the one current system subject to quality controls.

Section Number:	5.2.1
Summary or Excerpt:	N/A
Comment:	APS augmented its procurement process with guidance contained within the voluntary appendix to ANSI N45.2.13. Regulatory Guide 1.123 does not require use of the voluntary appendix to ANSI N45.2.13. It states, in part "ANSI N45.2.13-1976 contains an appendix, which, although not part of the standard, provides information useful in deciding how and to what extent quality assurance program requirements may be specified in procurement documents. However, a commitment to follow this guide does not require the use of the appendix." APS finds that the voluntary appendix is a very useful guide in providing criteria to be evaluated when determining if the dedication of low risk significant items should use the graded approach. APS would recommend endorsement of the voluntary appendix as an acceptable method to determine appropriate candidates for the graded approach.

ENCLOSURE 4

COMMENTS ON

DRAFT REG. GUIDE 1065

AND

DRAFT STANDARD REVIEW PLAN CHAPTER 16-1

CONCERNING

**AN APPROACH PLANT SPECIFIC, RISK-INFORMED,
DECISION MAKING: TECHNICAL SPECIFICATIONS**

Comments for Draft Guide 1065

Section Number:	
Summary or Excerpt:	Document in general
Comments:	Inconsistent use of the terms "small" and "very small". SRP uses "very small" consistently. We believe proper term for both documents should be "small".

Section Number:	
Summary or Excerpt:	Document in general
Comments:	Use consistent name for Configuration Risk Management Program. Also, use CEOG draft CRMP rather than bulleted items to be consistent with pilot application.

Section Number:	4.3.3.4
Summary or Excerpt:	Section in general
Comments:	Truncation limit method cited is too prescriptive; for high unavailabilities, level may not be adequate; for low unavailabilities, level is excessive.

Section Number:	4.3.7
Summary or Excerpt:	Section in general
Comments:	Element 3: Should reference Tier 3 (CRMP) here. Also, wording sounds like "real time" risk monitor is required, which is too prescriptive.

Section Number:	4.4
Summary or Excerpt:	Section in general
Comments:	The Reg. Guide paragraph "The final acceptability of the proposed change should be based on all of these considerations and not solely on the use of PRA-informed results compared to numerical acceptance guidelines" should be added to SRP.

Section Number:	4.6
Summary or Excerpt:	Section in general
Comments:	It is not clear if the cumulative impact is to be performed for AOT changes, STI changes or both.

Section Number:	A.2.3.1 Maintenance Downtime Data
Summary or Excerpt:	Section in general
Comments:	The guidance for how maintenance downtime may change as a result of extended AOTs does not reflect what may be realistically expected. Unplanned unavailability due to unscheduled maintenance would not be expected to increase due to extensions in AOTs. It would most likely remain unchanged, or possibly decrease due to an improved opportunity to perform planned maintenance. Changes in unavailability due to planned maintenance can be estimated from the anticipated plant practices subsequent to implementation of the extended AOT.

Comments for SRP Chapter 16-1

Section Number:	
Summary or Excerpt:	Document in general
Comments:	CCDF with LERF is specifically required in the SRP, but not in the Reg. Guide. Level 2 considerations should be addressed appropriately, as indicated in the Reg. Guide.

Section Number:	
Summary or Excerpt:	Document in general
Comments:	The Reg. Guide paragraph "The final acceptability of the proposed change should be based on all of these considerations and not solely on the use of PRA-informed results compared to numerical acceptance guidelines" should be added to SRP.

Section Number:	
Summary or Excerpt:	Document in general
Comments:	Use consistent name for Configuration Risk Management Program. Also, use CEOG draft CRMP rather than bulleted items to be consistent with pilot application.

ENCLOSURE 5

COMMENTS ON

DRAFT NUREG-1602

CONCERNING

THE USE OF PRA IN RISK-INFORMED APPLICATIONS

000000



Comments for NUREG 1602

Section Number:	1.4 Role in Risk-Informed Regulation
Summary or Excerpt:	"Some applications are complex and may necessitate a higher standard and high accuracy from a supporting PRA. Since these applications are the most demanding, they dictate the level of detail in this document. However, less demanding applications, such as those that need information only about PRA insights, or those that rely on quantitative results only in selected areas of the PRA, may use, as appropriate, simpler models as compared to those described in this document."
Comments:	This document presents a description of the "state of the art" PRA and this is acknowledged in this section of the document. However, little general guidance is presented concerning the specific modeling requirements for specific risk-informed applications, and where it is provided it is not organized in an easily understandable manner. It is recommended that a section be added to the application specific Reg. Guides, possibly as an appendix, that outlines the PRA requirements for the respective applications using this NUREG as a reference point, but then specifically noting where a model that is simpler than that described in the NUREG would be acceptable for use for that specific application.

Section Number:	2.1.1.2:
Summary or Excerpt:	For every risk-informed regulatory change, the potential for new accident initiators, higher risk contribution of (initially) screened out initiators(s), and change in the frequency of modeled initiator(s), should be examined.
Comments:	The NRC suggests that a FMEA (or equivalent) for SSC not modeled in the PRA, should be performed every time there is a change to the CLB. This seems to be somewhat of an overkill since they require FMEA's to be done on initial development of the model. It is suggested that the requirement be to review those documents and determine if there is an impact.

Section Number:	2.1.1.3:
Summary or Excerpt:	Section in general
Comments:	Please explain what is the intent of this section. It provides no value to the document.

Section Number:	3.1.1.1:
Summary or Excerpt:	The mapping from the Level 1 analysis to the PDSs is performed at the cutset level, not the accident sequence level.
Comments:	Does the term "mapping" mean the same as the term "grouping" as used in this section? If not, then define both.

Section Number:	3.1.3:
Summary or Excerpt:	Section in general
Comments:	Recommend mentioning how split point probabilities and accident progression states propagate through the containment event tree (i.e., rules of establishment).

Section Number:	3.2.1.1:
Summary or Excerpt:	Section in general
Comments:	The term "Puff Release" seems to denote a large explosive release immediately following containment failure, which then might be followed by a smaller but constant release. If this is the case, the "Early" time period as described does not necessarily remain unique. There seems to be some ambiguity in the example time periods presented.

Section Number:	Appendix A:
Summary or Excerpt:	Section in general
Comments:	How does the variance of CET split point probabilities and rule based assignments of the level 2 trees (as described in section 3) impact LERF importance values when determining truncation limits? When flexibility exists in applying techniques used for conducting level 2 analyses (as stated in Section 3.0), truncation limits selection based upon capturing 95% of total CDF seems to imply a prescribed method in obtaining level 2 results, which for many level 2 PRAs is a convoluted approach.

Section Number:	Appendix A:
Summary or Excerpt:	Section in general
Comments:	In the case of Appendix A, only system components are addressed. So for other prospective programs where changes may be based upon systems, human actions or maintenance activities, there is a lack of completeness. The intended use of this appendix is not obvious to the reader. If the intent is to provide guidance and suggested methodologies to use verses being all inclusive this should be made clear.

Section Number:	Appendix A:
Summary or Excerpt:	Section in general
Comments:	This appendix provides many useful insights in the use of quantitative and qualitative importance measures in the prioritization of SSCs. However, if all of the approaches were used together, the results could be very restrictive. In particular, two approaches outlined in this document and some of the Reg. Guides are overly restrictive. These are the "hardened success path" approach, which suggests ranking one system that supports a safety function as an HSSC and the "two HSSC per cutset approach" which suggest that all minimal cutsets contain at least two components that are ranked as HSSCs. These are certainly conservative approaches to ensure components ranked low due to high reliability and diversity are addressed appropriately, but the methodologies are overly prescriptive and in some cases not practically usable. These methods should be removed from the appendix, or correctly characterized as overly conservative, simplistic methods that need not be used if the integrated decision process adequately considers concerns related to highly reliable and diverse sets of components.



Section Number:	Appendix A.2.3:
Summary or Excerpt:	Ensure that all minimal cutsets contain at least two component failures for which requirements are not relaxed. This ensures that there are at least two lines of defense in each cutset not affected by the regulatory change.
Comments:	This requirement pretty much eliminates a two train plant's chances of using the PRA to perform risk based programs. This approach should be eliminated. Maybe a better approach would be if you do have two components in a cutset which are affected by the change to do a sensitivity analysis with a range of expected performance data based on an engineer's judgement regarding the performance under the change.

Section Number:	B.1:
Summary or Excerpt:	Objectives of the PRA peer review: Adequacy of baseline PRA to support one or more types of applications, validity of input sources, assumptions, models, data, validity of results and conclusions related to the proposed change. The peer reviewers should separately note problems that are expected to be significant for future CLB or baseline PRA changes but not necessarily for the current change.
Comments:	The peer review of baseline PRA or PRA support for CLB changes would not be reasonably expected to note significant problems that may be associated with future (undetermined) proposed changes. This requirement should be deleted from section B.1 of NUREG 1602.

