UNITED STATES
NUCLEAR REGULATORY COMMISSION
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D405

NUCLEAR ENERGY INSTITUTE

FAX Cover Sheet

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Comments:

Attached is a summary of the PTS effort currently being considered by industry. This recommendation without these specifics were discussed the NRC Regulatory information conference. During our 2 pm conference call today, we would like to discuss this industry proposal and learn how it would mesh with other NRC activities. We also wish to discuss industry's proposed RPV integrity database

NEI RECOMMENDATIONS

- PTS ACTION PLAN (ALSO ADDRESSES NON-PTS ISSUES)
  - 4 NEAR-TERM ACTIONS
  - 6 LONG-TERM ACTIONS
- ALL RECOMMENDED ACTIONS WERE BASED ON THEIR ABILITY
  - TO APPROPRIATELY ADDRESS KEY TECHNICAL ISSUES
  - TO PROVIDE A BASIS FOR THE NRC TO HAVE SUFFICIENT CONFIDENCE THAT THE KEY ISSUES AND THEIR TECHNICAL ASPECTS WILL BE WELL UNDERSTOOD

TABLE F-5, DESCRIPTION OF PTS IMPLEMENTATION PLAN LEGENDS

Technical Areas for Concerns of Table F-3

CCAR Define Computer Code Acceptance Requirements so that calculated results are acceptable for probabilistic evaluations. Addresses concern 6 that all evaluations could require the use of the same regulatory controlled executable code with no access to the source code for programming and evaluation of viable industry alternatives.

MPFC Define Methods for Plant-specific Flaw Characteristics to be used for probabilistic vessel integrity evaluations. Addresses concerns 5 and 8 that little credit is given to results of vessel examinations that should provide more realistic (less conservative) flaw characteristics and calculated probabilities.

PFTA Define a Probabilistic Flaw Tolerance Approach to assess the need for or benefit of mitigative actions. Addresses concerns 3 and 4 that acceptance of any calculated value as the true vessel failure probability is very remote and new calculational requirements that are not thoroughly evaluated could unnecessarily reduce the allowable fluence.

SCTP Define Screening Criteria Trigger Point above which a more detailed assessment of uncertainties is warranted. Addresses concerns 1 and 2 that decisions on required mitigative actions cannot be made rationally when trigger point and increased uncertainty requirements are not know a priori.

VFRC Define Vessel Failure Risk Criteria by levels of concern, including constituent ranges of event frequencies and conditional probabilities. Addresses concern 7 that risk level for current PTS screening criteria could be reduced by factor of 50 due to arbitrary requirements on constituent parts.

Implementation Plans

I - Use industry input to formulate industry recommendations

II - Use additional studies to formulate industry recommendations

III - Use existing information to formulate industry recommendations

Priority Numbers

1 - Absolutely essential for program success

2 - Highly desirable for program success

3 - Desirable but not mandatory for program success

TABLE F-6, NEAR-TERM ACTIONS FOR PTS IMPLEMENTATION PLANS

Item No.	Action Item Description	Tech. Area	Impl. Plan*	Priority No.	Est. Cost
1	Work with the NRC Staff to understand required uncertainties for calculating RT_{PTS} (ART in R.G. 1.99) per intent of PTS screening criteria.	SCTP	I	2	L
2	Develop position on vessel risk criteria for all events (HU/CD, PTS, etc.) by considering current results from industry IPE/PRA studies	VFRC	I	1	L
3	Define recommended list of fracture-mechanics and materials topics for further evaluation at EPRI/NRC sponsored expert's meetings, such as cladding and shallow-flaw effects	CCAR	III	2	L
4	Prepare input/output specifications for adding results of vessel pre- and in-service inspections to integrated industry database	MPFC	I	3	L
See Table F-5 for PTS Implementation Plan Legends					

* All Implementation Plans (Tables F-8 to F-10) are completed by:

"NRC publishes official documentation of issue resolution."

TABLE F-7, LONG-TERM ACTIONS FOR PTS IMPLEMENTATION PLANS

Item No.	Action Item Description	Tech. Area	Impl. Plan	Priority No.	Est. Cost
1a	Define a recommended probabilistic flaw tolerance approach including the limiting flaw characteristics, fracture-mechanics methods, material properties and uncertainty bounds.	PFTA and SCTP	II	1	H
1b	Define a recommended procedure for incorporating results of development programs on thermal-hydraulics, integrated industry database and surveillance programs into the input to probabilistic PTS evaluations.	CCAR	III	2	L
1c	Recommend a procedure for using new information to reduce uncertainties and how those reduced uncertainties can be used to the advantage of the plant operator.	SCTP	I	2	L
2	Define recommended method for defining plant specific limiting flaw charcteristics from fabrication history and inspection detection and sizing reliabilities and measured results.	MPFC	II	3	M
3	Recommend requirements for computer codes used in probabilistic PTS evaluations including procedures and acceptance criteria for code validation and verification.	CCAR	II	1	H
4	Assess need for a total PTS evaluation on a typical example pressure vessel with a detailed report for industry review and comment.	All	I	3	L
See Table F-5 for PTS Implementation Plan Legends					

HOW ACTIONS ADDRESS TECHNICAL CONCERNS

Action	Description	Technical Concerns Addressed
NT-1	Work with NRC to Understand Required Uncertainties for Calculating RT_{PTS} or ART	• Decisions on required mitigative actions cannot be made rationally when trigger point and increased uncertainty are not known a priori.
NT-2	Develop Vessel Risk Criteria Position for All Events, Including Heatup & Cooldown	• Risk level for vessel integrity screening could be reduced by a factor of 50 due to arbitrary limits on constituent parts.
NT-3	Define Recommended List of Topics for EPRI/NRC Experts' Meetings (eg. Shallow Flaws)	• All integrity evaluations could require the use of the same NRC controlled computer code with no capability to evaluate viable industry alternatives.
NT-4	Prepare Specifications for Adding Inspection Results to Integrated Industry Database	• Little credit is given to results of vessel examinations that could provide more realistic (less conservative) flaw characteristics to set limits.
LT-1a	Define Probabilistic Flaw Tolerance Approach to Assess the Need for or Benefit of Mitigative Actions	• Acceptance of any calculated value for true vessel integrity is very remote and new calculational requirements that are not thoroughly evaluated could unnecessarily reduce available margins. • Decisions on required mitigative actions cannot be made rationally when trigger point and increased uncertainty are not known a priori.
LT-1b	Define Procedure for Use of Development Results in Vessel Integrity Evaluations	• All integrity evaluations could require the use of the same NRC controlled computer code with no capability to evaluate viable industry alternatives.
LT-1c	Define Procedure to Reduce Uncertainties and How to Best Take Advantage of Them	• Decisions on required mitigative actions cannot be made rationally when trigger point and increased uncertainty are not known a priori.
LT-2	Develop Method for Defining Flaw Characteristics from Plant/Industry ISI Data	• Little credit is given to results of vessel examinations that could provide more realistic (less conservative) flaw characteristics to set limits.
LT-3	Recommend Procedures for Vessel Integrity Code Verification and Validation	• All integrity evaluations could require the use of the same NRC controlled computer code with no capability to evaluate viable industry alternatives.
LT-4	Assess Need for Example Integrity Evaluation Report	• Would provide example application of recommended methods to address all concerns above.

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DATE 5/9/94

TIME PM

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TO

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