AUG 30 1983

MEMORANDUM FOR: R. F. Fraley, Executive Director
Advisory Committee on Reactor Safeguards

FROM: W. J. Dircks
Executive Director for Operations

SUBJECT: ACRS COMMENTS ON THE PRIORITIZATION OF GENERIC ISSUES

References:
1. Memorandum for W. Dircks from R. Fraley, "ACRS Comments on the Prioritization of Generic Issues," June 20, 1983
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3. Memorandum for R. Fraley from W. Dircks, "ACRS Comments on the Prioritization of Generic Issues," July 6, 1983
4. Draft NUREG-0933, "A Prioritization of Generic Safety Issues," March 31, 1983

The ACRS comments (References 1 and 2) on the Staff's evaluation of issues contained in Reference 4 have been reviewed. In accordance with your request, written responses to these comments are enclosed for your information.

We appreciate your continuing interest in the Staff's prioritization process and look forward to receiving your comments on the remaining issues.

(Signed) William J. Dircks

William J. Dircks
Executive Director for Operations

Enclosures:
1. Staff Response to Those Issues for Which the ACRS Agrees With the Staff's Priority Ranking, but has Comments
2. Staff Response to ACRS Comments Related to Those Issues on Which the ACRS Disagrees With the Staff's Priority Ranking

*See attached sheets for concurrences

OM-7
ACRS
XRD-71

IE:D*	DHFS:D*		
RDeYoung	HThompson		
8/15/83	8/16/83		
RES:D*	DE:D*	DSI:D*	
RMinogue	RVollmer	RMattson	
8/18/83	8/24/83	8/24/83	

OFFICE	DST:SPEB*	DST:SPEB*	DST:AD/T*	DST:D	NRR	NRR:D	EDO
SURNAME	REmrit:kh	WMinners	FRowsome	TSpeis for	ECase	HDenton	WDircks
DATE	8/5/83	8/5/83	8/8/83	8/25/83	8/ /83	8/ /83	8/29/83

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NRC FORM 318 (10-80) NRCM 0240 OFFICIAL RECORD COPY USGPO: 1981—335-960

MEMORANDUM FOR: Raymond F. Fraley, Executive Director
Advisory Committee on Reactor Safeguards

FROM: William J. Dircks
Executive Director for Operations

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EDO 13249

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RECORD NOTE: RES concurrences acknowledges agreement with item II.B.5(3) only. This is the only item RES has lead on, as per NRR request.

FGillespie

cc: H. Denton, R. DeYoung, R. Minogue, C. Heltemes, J. Shea, J. Fouchard, H. Plaine, P. Norry, J. Davis, G. Kerr

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*RES Office Director concurrence represents agreement with those items where RES has lead responsibility only. New staff responses for Issue No. I.D.5(4) should be substituted for the statement in the current draft.

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DW concurrence with comments noted in dot memo

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GL 8/14/83

+ DW/ concur with changes noted

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EDO 13249

ENCLOSURE 1

STAFF RESPONSE TO THOSE ISSUES
FOR WHICH THE ACRS AGREES WITH
THE STAFF'S PRIORITY RANKING, BUT HAS COMMENTS

EDO 13249 ENCLOSURE 1

ISSUE NO:	7
TITLE:	Failures Due to Flow Induced Vibrations
PRIORITY RANKING:	DROP
LEAD OFFICE/DIVISION/BRANCH:	NRR/DSI/RSB

ACRS COMMENTS:

"The Staff makes an adequate case for the types of failures they consider. However, they do not appear to have considered the problem of flow-induced breaking loose of flow deflectors of the sort that the Office for Analysis and Evaluation of Operational Data (AEOD) has brought out."

STAFF RESPONSE:

The issue of flow-induced failure of internal appurtenances such as flow deflectors which has been raised by AEOD is listed as New Generic Issue No. 35 in Table 2 of NUREG-0933. The prioritization of Issue No. 35, "Degradation of Internal Appurtenances in LWRs," is currently being evaluated by the staff and will be forwarded to the ACRS after the Staff's peer-review has been completed.

EDO 13249 ENCLOSURE 1

ISSUE NO:	21
TITLE:	Vibration Qualification of Equipment
PRIORITY RANKING:	Covered in USI A-46
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/EQB

ACRS COMMENTS:

"The scope appears to be too narrow. A review of the dynamic loads to be included should be performed. Specifically, flow-induced vibrations should be evaluated and valve dynamic loads under faulted conditions (i.e., rapid closure of main steam isolation valves under main steamline break) should be included. It should be noted that the scope of USI A-46 does not appear to include this issue as indicated by NUREG-0933."

STAFF RESPONSE

Further investigation by the Staff has revealed that this issue is not covered in the scope of USI A-46. As a result, Issue 21 is scheduled for reprioritization and the above ACRS concerns will be addressed. A copy of the prioritization of the issue will be forwarded to the ACRS after the Staff's peer review has been completed.

EDO 13249 ENCLOSURE 1

ISSUE NO:	22
TITLE:	Inadvertent Boron Dilution Events
PRIORITY RANKING:	DROP
LEAD OFFICE/DIVISION/BRANCH:	NRR/DSI/RSB

ACRS COMMENTS:

"Considering the 'worst' of the designs, it should be ascertained that the probability of a radiation injury or fatality to plant personnel working in the vicinity of the core is acceptably low."

STAFF RESPONSE:

The hazard to plant workers was discussed and qualitatively considered in the prioritization of this issue. The hazard to plant personnel comes from neutrons and fission gammas streaming from the core, plus airborne activity resulting from heatup of any leaking fuel rods, plus airborne activity from activation products.

The hazard from the release of gap activity from leaking fuel rods is expected to be low, since the inventory of gap activity in existing leakers should be low for the time frame of this accident and since almost all of the iodine would be retained in the water.

A TRAC calculation of this accident indicates that the reactor would stabilize at roughly 3% power for situations where the head is off the vessel, as it would be during refueling. We have extrapolated an older shielding calculation (Eurochemic Technical Report No. 150, July 1963) to this situation, making conservative assumptions regarding water depth and density, with no credit for dissolved boron. The results indicate that, with the moderator at boiling, radiation fields on the refueling floor due to gammas and neutrons would be on the order of 4 rem/hour. Other areas within containment (which would have the benefit of the biological shield) would be comparable to or less than this figure.

For an accident situation, this is not a high field. Area radiation monitors, which are generally set for 100 to 1000 mr/hour, would give warning even if the SRM flux monitors and the boiling reactor water were ignored. Assuming an evacuation time of 30 minutes, the dose to workers within containment would not exceed permissible limits of 10 CFR Part 20.

However, the uncertainty as to the consequences of a boron dilution event are large. In order to reduce this uncertainty, further analyses are being performed. These consist of: (1) analyses of unmitigated boron dilution events to ascertain the extent and severity of the consequences, and (2) having DHFS determine the acceptability of crediting operator action to perform the mitigative actions in a timely manner in the absence of discrete alarms. At present, the Staff concludes that the DROP ranking is still appropriate.

EDO 13249 ENCLOSURE 1

ISSUE NO:	23
TITLE:	Reactor Coolant Pump Seal Failures
PRIORITY RANKING:	HIGH
LEAD OFFICE/DIVISION/BRANCH:	NRR/DSI/ASB

ACRS COMMENTS:

"Coolant pump seal failure is a part of the small LOCA generic category. The utilities need to improve their ability to forestall these by design, and by better failure symptoms to signal for corrective maintenance actions. This does not appear to be a matter for NRC Staff work other than surveillance of licensee progress. Seal failures are not of more concern than LOCAs from power operated relief valve leaks or small line failures. The rate of coolant loss is the principal issue. Suggest that minor level of Staff effort be assigned."

STAFF RESPONSE:

The Staff agrees that RCP seal failures are part of the SBLOCA generic category, a position that is explicitly stated in the prioritization of the issue. While it appears that licensees need to improve their ability to forestall major RCP seal failures, the prioritization does not prejudge the resolution. Better diagnostic equipment and instrumentation for the early identification of failure are some of the possible resolutions. In addition, improvements in the following areas will also be investigated as possible resolutions: maintenance training; quality assurance controls; procurement, storage, and handling specifications; and operational procedures. The Staff believes that NRC involvement and assistance will result in a more timely implementation of needed improvements in RCP seal reliability.

The rate of coolant loss in tandem with the frequency of major RCP seal failures is the principal issue and, as the prioritization shows, is a major contributor to risk. Data reviewed by the Staff show that the frequency of RCP seal failures is 10 times greater than PORV-related failures. Furthermore, PORV leaks or small line failures are usually isolatable. RCP loop isolation is only available in a limited number of PWRs. In these limited cases, RCP loop isolation is designed for maintenance and requires special procedural steps and interlocks not classified as safety grade.

The frequency of seal failures is 20 times greater than the WASH-1400 SBLOCA frequency. Major RCP seal failures are equivalent to a SBLOCA (1/2 in to 2 in diameter pipe break). This break spectrum is a dominant contributor to PWR core-melt and PWR Release Categories 3, 4, 5, and 6.

The Staff believes that the level of attention to this issue should be proportional to the potential reduction in public risk, which is significant. In order to assure that some minimum corrective actions are taken by utilities the NRC should resolve this issue and set out guidance or requirements appropriate to assure adequate protection of the public health and safety.

EDO 13249 ENCLOSURE 1

ISSUE NO:	A-13
TITLE:	Snubber Operability Assurance
PRIORITY RANKING:	RESOLVED
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/MEB

ACRS COMMENTS:

"The Staff has imposed inspection requirements on the licensed plants. Effectiveness of these measures is not yet known. What frequency of snubber malfunction is tolerable? Does the test and inspection requirements satisfy the reliability requirements? To resolve this issue would require a study of failure trends over a period of time. Should be assigned to the Institute of Nuclear Power Operations (INPO) for reporting. Does not need Staff resources. This is only resolved in the sense that the NRC Staff believes that their requirements will make the failure rates OK. Should be listed as 'resolved with qualifications.'"

STAFF RESPONSE

The effectiveness of the inspection requirements imposed by the Staff to assure snubber operability can only be proven by a future evaluation of snubber failures. As a result of the resolution of TMI Action Plan Item I.E.4, the NRC signed a Memorandum of Understanding with INPO in June 1981 that will allow both parties to share operating experience evaluations. AEOD has the responsibility for coordinating this effort with INPO. Should operating history indicate the Staff's requirements to be an inadequate solution to this issue, the mechanism is now in place for reexamining the issue by the Staff. Only then can the Staff answer the questions on what frequency of snubber malfunction is tolerable and whether or not the test and inspection requirements satisfied the reliability requirements. The imposition of requirements related to this issue is no different from the imposition of requirements in other areas where the primary intent is to reduce equipment failure rates.

EDO 13249 ENCLOSURE 1

ISSUE NO:	A-18
TITLE:	Pipe Rupture Design Criteria
PRIORITY RANKING:	DROP
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/MEB

ACRS COMMENTS:

"This was never on the ACRS generic list but, because of the concern for pipe whip restraint problems of reliability and inspection access, it deserves attention. The Staff is ready to take a position on Westinghouse PWR primary piping that would eliminate double-ended pipe breaks as a design basis. To be useful, this action would have to extend to all PWRs and should address other piping systems which represent the bulk of the problem.

Not worthy of effort unless the results can be made available within a couple of years. Existing Westinghouse PWRs would probably not be altered by a change in criteria. The problem needs attention mainly because the case for reliable pipe whip restraints is weak and it would be better to build the safety argument on ductile inelastic response of piping systems. (The matter of most importance is the mode of rupture and potential locations. Not all restraints need be eliminated.)"

STAFF RESPONSE:

The Staff agrees with the ACRS observation that the position on 'leak before break' that the Staff is about to take on USI A-2 Westinghouse Owner Group plants should be extended to other PWRs. Further work on this topic is planned under a joint NRR/RES Proposal for Reviewing NRC Requirements for Nuclear Power Plant Piping.

EDO 13249 ENCLOSURE 1

ISSUE NO: A-21
TITLE: Main Steamline Break Inside Containment - Evaluation of Environmental Conditions for Equipment Qualification
PRIORITY RANKING: LOW
LEAD OFFICE/DIVISION/BRANCH: NRR/DSI/CSB

ACRS COMMENTS:

"The NRC Staff has codified the interim criteria (NUREG-0588) in the new Rule, 10 CFR 50.49. The environmental conditions inside containment appear to be based on successful operation of isolation devices such as the Main Steam Isolation Valves (MSIVs), turbine stop valves, and control valves to preclude the blowdown of more than one steam generator inside containment. The reliability of these valves to perform their isolation function should be evaluated. The ACRS will follow implementation."

STAFF RESPONSE

Blowdown of more than one steam generator by means of backflow through the steam lines would indeed increase the probability of equipment failure. However, this is outside the scope of Issue A-21 which was limited to the issue of whether the blowdown was correctly modeled. Blowdown of more than one steam generator is another issue with broader questions about cooldown reactivity transients and containment overpressure. Current requirements for steam line isolation are believed to be adequate to preclude blowdown of more than one steam generator. However, the ACRS may wish to identify the reliability of the isolation valves as a generic issue. The Staff believes that currently available information does not indicate this to be a significant issue.

EDO 13249 ENCLOSURE 1

ISSUE NO:	A-23
TITLE:	Containment Leak Testing
PRIORITY RANKING:	Regulatory Impact Issue
LEAD OFFICE/DIVISION/BRANCH:	NRR/DSI/CSB

ACRS COMMENTS:

"The ACRS agrees with the Staff's proposed priority, but only within the strict context of the issue as described, not with the broader context of the title of the issue."

STAFF RESPONSE:

The Staff agrees with the ACRS on the safety importance of the broader aspects of containment leakage. Testimony to this agreement is demonstrated by the Staff's HIGH priority ranking of TMI Action Plan Item II.E.4.3, "Integrity Check," where the broader aspects of containment leakage were addressed.

EDO 13249 ENCLOSURE 1

ISSUE NO: B-1
TITLE: Environmental Technical Specifications
PRIORITY RANKING: Environmental Issue (RESOLVED)
LEAD OFFICE/DIVISION/BRANCH: NRR/DE/EHEB

ACRS COMMENTS:

"The ACRS agrees with the Staff's proposed priority. However, it urges that, in revising these Specifications, the NRC Staff attempt to minimize the accompanying work load on the utilities. Data that are not necessary should not be required. Consideration should also be given to changing the title of this issue. The current title could imply that it pertains to the environmental qualification of safety-related nuclear power plant equipment."

STAFF RESPONSE:

The Yellow Creek decision (ALAB-515) established that the NRC had no responsibility for imposing conditions on licensees for protecting the aquatic environment since the Clean Water Act placed full responsibility for such matters with the EPA. As a result, the current ETS format is consistent with this decision and does not require any LCOs or water quality monitoring programs.

This issue was identified in NUREG-0471 which was published in 1978. Since then, the issue has been resolved. It was included in NUREG-0933 for the sole purpose of accounting for all items that were part of the Task Action Plan (NUREG-0471). The Staff believes that changing the title of this issue now would complicate future reference to the issue and would generally serve no useful purpose since it has been resolved.

EDO 13249 ENCLOSURE 1

ISSUE NO:	B-5(b)
TITLE:	Buckling Behavior of Steel Containments
PRIORITY RANKING:	MEDIUM
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/SGEB

ACRS COMMENTS:

"If buckling could lead to early failure of the containment in some of the core-melt scenarios, the consequences could be changed more than in the analyses limited only to design basis accidents. This might justify a higher priority. However, research is now under way and probably cannot be accelerated much."

STAFF RESPONSE

Issue B-5(b) involved concern over the adequacy of the design basis acceptance criteria for steel containments. Based on this concern alone, the Staff reached a conclusion of MEDIUM priority for the issue. Under technical assistance programs, the Staff has analyzed several containment designs and found them to be acceptable, based on an Interim Staff Position (See NUREG/CR-2836). The present Staff schedule for resolution of the issue requires a revision of the Interim Staff Position, additional containment analyses, and an SRP revision.

EDO 13249 ENCLOSURE 1

ISSUE NO:	B-6
TITLE:	Loads, Load Combinations, and Stress Limits
PRIORITY RANKING:	HIGH
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/MEB

ACRS COMMENTS:

"This continues to be a matter of controversy between the Staff and licensees. It is a broader aspect of the issue A-12, 'Pipe Rupture Design Criteria,' applying to all structures. This has to be dealt with probabilistically. The work to date is confusing and the requirements lack consistency. Needs Staff work but should address all types of structures (piping, containments, supports, equipment, instrumentation and controls) as influenced by structural loads."

STAFF RESPONSE

The remaining task of B-6 is the formal publishing of requirements to decouple LOCA and SSE events. The technical work on whether an earthquake can cause pipe break using a probabilistic approach has been completed. The Staff presentation to the ACRS in June 1983 and the ACRS letter of June 14, 1983 both conclude that the technical work supports decoupling for mechanical components. It should be noted that the scope of Issue B-6 at present is limited to mechanical components, including instrumentation and controls, and their supports. Building structures (i.e., containment and other plant buildings) are not included due to their different requirements in dealing with extreme events. The Structural Engineering Branch has concluded from studies completed (NUREG/CR-2039, "Dynamic Combination for Mark II Containment Structures," and NUREG/CR-1890, "ABS, SRSS, and CDF Response, Combination Evaluation for Mark III Containment and Drywell Structures") that seismic loads and LOCA and SRV loads on containment structures should continue to be combined using the absolute sum method.

EDO 13249 ENCLOSURE 1

ISSUE NO: B-8
TITLE: Locking Out of ECCS Power Operated Valves
PRIORITY RANKING: DROP
LEAD OFFICE/DIVISION/BRANCH: NRR/DSI/RSB

ACRS COMMENTS:

"The NRC Staff suggests dropping this item since no significant accident initiators have been identified to date. However, the Staff has not examined any plant PRAs in this regard. Although the ACRS agrees with the proposed priority ranking for now, it plans to explore the significance of this item vis-a-vis available PRAs. In the event of significant findings, the ACRS may request a reopening of this item."

STAFF RESPONSE

Currently the ECCS valves locked out are positioned to the safe position in the event of a single failure in the system. If a significant risk is identified that results from locking-out of the ECCS valves, the Staff will reevaluate the current lock-out position.

EDO 13249 ENCLOSURE 1

ISSUE NO: B-16
TITLE: Protection Against Postulated Piping Failures in Fluid Systems Outside Containment

PRIORITY RANKING: Covered in A-18 (DROP)
LEAD OFFICE/DIVISION/BRANCH: NRR/DE/MEB

ACRS COMMENTS:

"Requirements for these piping failures have been in place for a long time but questions have been raised about the interpretation and applicability of the requirements to older plants. The issue needs clarification. The Interim Reliability Evaluation Program (IREP) studies should indicate what is needed. No current basis exists for judging need for priority attention."

STAFF RESPONSE:

The description of this issue in NUREG-0933 is the Staff's clarification. This issue, as appears in NUREG-0471, had already been incorporated into Issue A-18 (See NUREG-0371) prior to the publication of both NUREGs-0371 and 0471 in 1978.

EDO 13249 ENCLOSURE 1

ISSUE NO: B-26
TITLE: Structural Integrity of Containment Penetrations
PRIORITY RANKING: MEDIUM
LEAD OFFICE/DIVISION/BRANCH: NRR/DE/MTEB

ACRS COMMENTS:

"If the research on penetration integrity in severe accidents shows that the penetrations are weak spots and containment is breached at lower pressure than gross failure, the consequence estimates in the Staff's analyses may be increased significantly. The cost of a fix might also be increased greatly. For these reasons, it is hard to prioritize the narrow issue defined here. MEDIUM may be OK for now, but the more general (and probably more important) issue of containment and penetration is clearly of HIGH priority."

STAFF RESPONSE:

The Staff agrees with the ACRS comments concerning penetrations as possible leak spots. The risk associated with failure of penetrations in accidents beyond the design basis accidents is being investigated as part of the Severe Accident Research Program. However, the Staff has not identified any issue related to containment or containment penetrations, except Issue II.E.4.3, for which current requirements are clearly inadequate or pose a significant risk and, therefore, would warrant ranking as HIGH priority.

EDO 13249 ENCLOSURE 1

ISSUE NO: B-27
TITLE: Implementation and Use of Subsection NF of the ASME Code
PRIORITY RANKING: Licensing Issue
LEAD OFFICE/DIVISION/BRANCH: NRR/DE/MEB

ACRS COMMENTS:

"This requirement for structural supports is intended to assure adequacy of materials on which Code vessels are supported. This needs follow-up by the Office of Inspection and Enforcement (IE) and should be covered in the Interim Reliability Evaluation Program studies."

STAFF RESPONSE:

Subsection NF is being modified to clearly indicate jurisdictional boundaries for construction standards between building structures and component supports. In operating plants and some plants under construction, supports were designed to the building structure codes. The Staff goal is to make all elements of construction (i.e., materials, design, fabrication, and examination) and ISI in the support load path compatible and equivalent, irrespective of the standard of construction. The revision to Subsection NF now underway will accomplish that purpose for the ASME Code. For plants already under construction, the Staff is meeting the compatibility goal by case specific review. We agree with the ACRS that IE should follow this issue to make sure that implementation is proper. The Staff does not believe that this issue should be covered by IREP.

EDO 13249 ENCLOSURE 1

ISSUE NO: B-47
TITLE: Inservice Inspection of Supports - Classes 1, 2, 3, and MC Components
PRIORITY RANKING: DROP
LEAD OFFICE/DIVISION/BRANCH: NRR/DE/MTEB

ACRS COMMENTS:

"This issue is not clear. The need for inspection depends on the safety concerns. The Staff needs to clarify the issue."

STAFF RESPONSE:

Two principal areas of safety concern are identified in this issue: (1) discrepancies between the design drawings and the as-built hardware and, (2) degradation of component supports. These items relate directly to the licensees' QA program and the ASME Code, Section XI (1980 edition), respectively. As pointed out in the prioritization of this issue, these requirements already fully address these concerns so that no additional inspection requirements are necessary. There is no indication that discrepancies in design drawings are numerous or significant enough to pose a risk or that supports are significantly degraded. Therefore, it is recommended in the prioritization that no further allocation of staff resources for this issue is appropriate and that the issue be dropped.

EDO 13249 ENCLOSURE 1

ISSUE NO:	B-53
TITLE:	Load Break Switch
PRIORITY RANKING:	Regulatory Impact Issue (Partially Resolved)
LEAD OFFICE/DIVISION/BRANCH:	NRR/DSI/PSB

ACRS COMMENTS:

"The question as to whether the grid or the plant main generator should be used as the preferred source of AC power should be examined in the near future either under this activity or under a new activity."

STAFF RESPONSE:

The scope of B-53 is limited to the qualification criteria of load break switch which has been incorporated into SRP Section 8.2 already. The ACRS comment on "whether the grid or the plant main generator should be used as the preferred source of AC power" is a separate issue. The Staff recommends that the ACRS submit this separate issue to the Staff for prioritization as a New Generic Safety Issue.

EDO 13249 ENCLOSURE 1

ISSUE NO: C-1
TITLE Assurance of Continuous Long-Term Capability of Hermetic Seals on Instrumentation and Electrical Equipment
PRIORITY RANKING: RESOLVED
LEAD OFFICE/DIVISION/BRANCH: NRR/DE/EQB

ACRS COMMENTS:

"This problem appears to be resolved by the codification of NUREG-0588 and the Division of Operating Reactor (DOR) Guidelines. Requirements have been established and are being implemented. Apparently, during the equipment qualification evaluation, maintenance procedures are reviewed. However, details of the NRC Staff requirements are not known. In addition, this issue appears to be limited to moisture ingress through damaged hermetic seals. Other areas, such as moisture ingress through conduits should be evaluated."

STAFF RESPONSE:

Cabling is terminated to safety-related electrical equipment and instruments through an electrical connector which provides a hermetic seal for both the equipment and the cable. The qualification of electrical cable and connectors (which could be affected by moisture ingress through conduits) as well as equipment and instruments is being reviewed by the Staff as a result of the Commission Order which codified NUREG-0588. Therefore, the Staff believes that the ACRS concern is adequately addressed by the Staff's current design requirements and review procedures.

EDO 13249 ENCLOSURE 1

ISSUE NO:	C-7
TITLE:	PWR System Piping
PRIORITY:	RESOLVED
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/MTEB

ACRS COMMENTS:

"The interpretation of this issue is unclear. BWR piping systems have problems but PWRs have no identifiable difficulties unless they are in pressure-letdown circuits."

STAFF RESPONSE:

The scope of this issue, as originally stated in NUREG-0471, was limited to stress corrosion cracking of low pressure, thin-walled, stainless steel piping in PWRs. As noted in the prioritization, this issue was resolved after the Staff determined that current ISI requirements are adequate. The issue of cracking of heavy-walled piping in PWRs was addressed by the Staff under Issue 14, "PWR Pipe Cracks," which is in the process of resolution.

EDO 13249 ENCLOSURE 1

ISSUE NO: C-10
TITLE: Effective Operation of Containment Sprays in a LOCA
PRIORITY: RESOLVED
LEAD OFFICE/DIVISION/BRANCH: NRR/DSI/AEB

ACRS COMMENTS:

"It is not clear that the evaluation of damage to equipment by inadvertent actuation has been fully resolved. The documents cited as resolving this issue (SRP 6.5.2 and ANSI/ANS 56.5-1979) do not address damage to equipment. It should be noted also that chemical addition systems for containment spray are considered optional."

STAFF RESPONSE:

The qualification of equipment for use inside containment is reviewed by the Staff. The safety concern of this issue has been resolved. Inadvertent actuation and subsequent damage (if any) to equipment is not a safety concern but an economic consideration. Licensees are allowed to choose the type of spray additive. As noted, any equipment damage resulting from inadvertent actuation that could affect safe operation must be corrected and the cost borne by the licensees.

EDO 13249 ENCLOSURE 1

ISSUE NO:	I.A.3.2
TITLE:	Operator Licensing Program Changes
PRIORITY RANKING:	RESOLVED
LEAD OFFICE/DIVISION/BRANCH:	NRR/DHFS/OLB

ACRS COMMENTS:

"The ACRS agrees that the specific actions called for under this item have been adequately addressed. However, significant operator licensing program changes are still under way and necessary. The appropriate content and form of licensing examinations are in question. The qualifications required for license examiners need to be specified."

STAFF RESPONSE

This issue is part of the Human Factors Program Plan and will undergo a reevaluation as part of that effort. The ACRS comments will be considered in this reevaluation.

EDO 13249 ENCLOSURE 1

ISSUE NO: III.D.1.4
TITLE: Radwaste System Design Features to Aid in Accident Recovery and Decontamination
PRIORITY RANKING: DROP
LEAD OFFICE/DIVISION/BRANCH: NRR/DSI/METB

ACRS COMMENTS:

> "Experience shows that radwaste systems in existing nuclear power plants are inadequate to meet post-accident decontamination requirements. Although this situation does not justify backfitting such systems on existing plants, the ACRS believes that this issue should be 'flagged' for reconsideration if and when applications for construction permits are forthcoming."

STAFF RESPONSE:

The Staff does not believe that there is any need to flag this issue for future reconsideration because the issue has very little or no risk reduction potential. The addition of radwaste system improvements to all new plants to reduce the cost of possible cleanup is not economical and there should be no requirement for this unless the safety improvement is shown to be significant. There is some potential for averting occupational dose following an accident but the reduction is small.

EDO 13249

ENCLOSURE 2

STAFF RESPONSE TO ACRS COMMENTS
RELATED TO THOSE ISSUES ON WHICH
THE ACRS DISAGREES WITH THE
STAFF'S PRIORITY RANKING

EDO 13249 ENCLOSURE 2

ISSUE NO: A-29
TITLE: Nuclear Power Plant Design for the Reduction of Vulnerability to Sabotage
PRIORITY RANKING: MEDIUM
LEAD OFFICE/DIVISION/BRANCH: NRR/DSI/ASB

ACRS COMMENTS: HIGH

"The ACRS believes that the topic of interest is the reduction of nuclear power plant vulnerability to industrial sabotage. Industrial sabotage at nuclear power plants is a sensitive issue which receives significant public attention. A-29 should not be restricted in scope so as to address only design changes to nuclear power plants. The Staff needs to consider sabotage in the broadest possible terms and to ensure that the opportunities and likelihood for sabotage are as low as reasonably achievable. The ACRS recognizes the difficulties inherent in using probabilistic techniques to determine public risk due to acts of sabotage. "Resolution" of this issue most probably will consist of applying serious, broad, and continuing attention to the matter. The ACRS believes that the scope of A-29 should be expanded and a priority ranking of HIGH should be assigned."

STAFF RESPONSE:

We share the ACRS interest in this important area. The Staff has programs that address the broader aspects of sabotage e.g., the "Insider Rulemaking," developed by NMSS. These broader programs are not affected by this more narrowly-defined generic issue on design considerations. This issue was evaluated in terms of its content and a MEDIUM priority ranking established accordingly. If additional information concerning the estimated risk reduction, cost of implementation, and/or additional considerations of a specific nature become available, the priority ranking could be reassessed on that new basis. However, work is going forward on Issue A-29 even with its MEDIUM ranking.

EDO 13249 ENCLOSURE 2

ISSUE NO:	A-41
TITLE:	Long-Term Seismic Program
PRIORITY RANKING:	MEDIUM
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/MEB
ACRS COMMENTS:	HIGH

"This program should be augmented or a new activity established as per the ACRS letter of January 11, 1983, to Chairman Palladino, related to the Quantification of Seismic Safety Margins."

STAFF RESPONSE:

It is our judgment that the MEDIUM priority assigned to item A-41 is presently warranted in terms of public risk reduction and in terms of value-impact. A work scope plan for this item is being prepared by the Division of Engineering, NRR, to be completed in September 1983. This work scope plan will consider the issues raised by the ACRS in its letter of January 11, 1983, to Chairman Palladino.

EDO 13249 ENCLOSURE 2

ISSUE NO:	B-30
TITLE:	Design Basis Floods and Probability
PRIORITY RANKING:	Licensing Issue
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/EHEB

ACRS COMMENTS: HIGH

"The NRC currently lacks a quantitative basis for evaluating this event."

STAFF RESPONSE:

The Staff agrees that the development of a quantitative probabilistic basis for evaluating flood events is very important and resources are being allocated for this purpose. This issue, however, does not involve a concern that current requirements for design basis floods are inadequate. On this basis, it was classified as a licensing issue.

EDO 13249 ENCLOSURE 2

ISSUE NO:	B-32
TITLE:	Ice Effects on Safety-Related Water Supplies
PRIORITY RANKING:	Licensing Issue
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/EHI

ACRS COMMENTS: MEDIUM

"The ACRS believes that interference with supply of cooling water to safety-related equipment could decrease the reliability of ultimate heat sink to adequately cool the core. An evaluation is required to determine what contribution a reduction in ultimate heat sink reliability makes to overall core melt."

STAFF RESPONSE:

Initially categorized as a Licensing Issue, this issue is currently being reprioritized as a safety issue. The ACRS will be informed of the Staff's results once the peer-review process has been completed.

EDO 13249 ENCLOSURE 2

ISSUE NO: B-50
TITLE: Post-Operating Basis Earthquake Inspection
PRIORITY RANKING: Regulatory Impact Issue
LEAD OFFICE/DIVISION/BRANCH: NRR/DE/SGEB

ACRS COMMENTS: MEDIUM

"Some advanced planning as to what would be required before plant startup should be done to avert unnecessarily long and expensive shutdowns and to assure that the proper actions would be taken.

STAFF RESPONSE:

The ACRS comment does not seem to disagree with the priority ranking. The basis for this issue is not a generic safety concern that current requirements (that licensees must demonstrate that no functional damage occurred following an OBE), are inadequate, but a desire to provide "changes in current requirements that could significantly reduce the impact (usually cost) on licensees without any substantial decrease in safety" (pg. 1 of NUREG-0933). This is the definition of a regulatory impact issue, which are in general of lower priority and are addressed separately from generic safety issues.

EDO 13249 ENCLOSURE 2

ISSUE NO:	D-1
TITLE:	Advisability of a Seismic Scram
PRIORITY RANKING:	DROP
LEAD OFFICE/DIVISION/BRANCH:	RES/DET/MSEB
ACRS COMMENTS:	MEDIUM

> "The NRC Staff has not adequately evaluated this issue nor obtained an understanding as to the basis for this requirement by the Japanese. Similarly, the British are currently reviewing the advisability of a seismic scram."

STAFF RESPONSE:

The Staff has re-evaluated this issue, but the analysis resulted in a LOW priority. We believe these two analyses adequately justify the priority ranking. A copy of the re-evaluation is being sent to the ACRS.

Regarding the Japanese requirements, the Staff reviewed the conclusions in NUREG/CR-3040, "Selected Review of Foreign Safety Research for Nuclear Power Plants, November 1982," regarding the Japanese seismic scram, this report concluded the following:

> "Japanese nuclear power stations employ seismic scrams to automatically shutdown the plant in the event of a strong motion earthquake. Scram settings are normally set at $0.9S_1$ level. The technical basis underlying the requirement for automatic seismic scrams is not clearly defined. At this time, it appears that this requirement is more a result of perceived public interest rather than a definitive safety need."

Regarding the British actions, the Staff will keep abreast of any new information that could be justification for re-evaluating this issue.

EDO 13249 ENCLOSURE 2

ISSUE NO: D-2
TITLE: Emergency Core Cooling System Capability for Future Plants
PRIORITY RANKING: Covered in USI A-45
LEAD OFFICE/DIVISION/BRANCH: NRR/DSI/RSB

ACRS COMMENTS: MEDIUM

"The focus of USI A-45 is on current-generation plants, not future plants as Item D-2 implies. In addition, based on its review and discussion with the cognizant NRC Staff, the ACRS believes that this item is not covered in USI A-45. As the ACRS has noted in a recent report to the Commission on the NRC Safety Research Program Budget for FY 1985 and 1986, the current Appendix K requirements have influenced, and will continue to influence the design and operation of ECC systems in a manner that could be deleterious to the overall concerns of ECC.

The ACRS believes that the NRC Staff should carry this as a separate generic issue, with a MEDIUM priority, and explore it in the context of the ongoing RES effort to revise Appendix K of 10 CFR Part 50."

STAFF RESPONSE:

The Staff agrees with the ACRS comment that USI A-45 addresses current plants. ECCS capability for future plants is being examined as part of standard plant design certification reviews in accordance with: (1) the Commission's proposed policy statement on severe accidents, and (2) the CP rule at 50.34(f)(1)(i). Accordingly, this issue of ECCS capability for future plants is considered to be a standard plant licensing issue and not a generic issue.

EDO 13249 ENCLOSURE 2

ISSUE NO:	I.A.2.5
TITLE:	Plant Drills
PRIORITY RANKING:	LOW
LEAD OFFICE/DIVISION/BRANCH:	NRR/DHFS/LQB
ACRS COMMENTS:	MEDIUM OR HIGH

"The ACRS questions the technical basis for the assumptions made to compute the risk reduction potential associated with this issue. Because of uncertainties in the assumptions made, coupled with the fact that the Value/Impact Score indicated that the ranking of this issue would be LOW to MEDIUM, the conservative approach would be to assign a MEDIUM priority to this issue (at least until better information is obtained). Also, matters related to simulator fidelity and validity of training programs are being pursued with high priority under several human factors generic issues. This suggests that a higher priority might be warranted."

STAFF RESPONSE:

The Division of Human Factors Safety is in the process of prioritizing all issues related to the human factors area. The ACRS comments will be considered in that effort.

EDO 13249 ENCLOSURE 2

ISSUE NO:	I.A.2.6(5)
TITLE:	Develop Inspection Procedures for Training Program
PRIORITY RANKING:	RESOLVED
LEAD OFFICE/DIVISION/BRANCH:	NRR/DHFS/LQB
ACRS COMMENTS:	MEDIUM

"Why is this considered RESOLVED when RES has a research program under way that would provide some criteria for assisting in training effectiveness evaluation? In addition, Staff efforts are under way to respond to Public Law 97-425. The Staff's proposed package in response to the Act includes a new training and qualification rule, a new training regulatory guide, and revised NRC inspection modules. Since the training regulatory guide and inspection modules (not yet developed) will provide detailed guidance to the industry and inspectors, and since the Staff intends to recommend 2-5 years for Industry to comply with the new training rule/guidance, a MEDIUM priority seems appropriate. Finally, one of the 23 tasks contained in the Human Factors Program Plan also deals with this specific topic. Since extensive Staff resources are being expended in this area, how can this issue be considered RESOLVED"?

STAFF RESPONSE:

As ACRS notes, various staff efforts are underway in this area. Also, as noted, the Human Factors Program Plan deals with this topic. Therefore, this issue will be reevaluated as part of that program and the ACRS comments will be considered.

EDO 13249 ENCLOSURE 2

ISSUE NO:	I.A.4.2(3)
TITLE:	Regulatory Guide on Training Simulators
PRIORITY RANKING:	RESOLVED
LEAD OFFICE/DIVISION/BRANCH:	RES/DFO/HFBR

ACRS COMMENTS: MEDIUM OR HIGH

"While Regulatory Guide 1.149, 'Nuclear Power Plant Simulators For Use in Operator Training' was published to endorse the revised ANSI/ANS 3.5-1981, additional training simulator changes still need to be made. Regulatory Guide 1.8 should be evaluated and revised as necessary in light of the ongoing simulator research. The Staff plans to make another revision to Regulatory Guide 1.149. This revision will continue to endorse ANSI/ANS 3.5-1981 (with some exceptions) but will require nuclear power plants to have a plant referenced simulator or other facility proposed device acceptable to the NRC. Continued expenditure of Staff resources in this area appears appropriate."

STAFF RESPONSE:

According to an RES memo from R. Minogue to H. Denton, "Draft Report on Prioritization of Non-NRR TMI Action Plan Items", dated March 29, 1983, item I.A.4.2(3) was resolved. However, this issue is presently included in a package prepared by DHFS for Division Director review entitled "Proposed Rulemaking for Licensed Operator Examination & Training and Qualification of Nuclear Power Plant Personnel Performing Functions Important to Safety" in preparation to presentation to the CRGR. This package contains a Regulatory Analysis embracing the full scope of the package, including Item I.A.4.2(3), so that our prioritization of this issue is moot, since a resolution (and in this case a regulatory analysis) is available. The listing of this issue will be changed to correctly reflect its current status.

EDO 13249 ENCLOSURE 2

ISSUE NO:	I.B.1.1(1, 2, 3, 4, 6, & 7)
TITLE:	Organization and Management Long-Term Improvements
PRIORITY RANKING:	MEDIUM
LEAD OFFICE/DIVISION/BRANCH:	NRR/DHFS/LQB, RES/DFO/HFBR
ACRS COMMENTS:	HIGH

"The ACRS believes that improvements to a utility's management and organization will reap benefits other than human-error rate reduction. These other benefits (e.g., improved productivity, improved plant quality, reduced absenteeism and turnover rate, etc.) should be taken into account when determining the priority for these items. The ACRS believes that such an analysis would indicate that these items should receive a HIGH priority. The ACRS would also like to caution the Staff that human-error rates vary greatly with managerial systems (probably much more than 0-20%). Human factors experts should be actively involved in evaluating the assumptions made to arrive at the total risk reduction."

STAFF RESPONSE:

According to a memorandum of understanding between DHFS and DST (June 10, 1983), the Division of Human Factors Safety is reevaluating all of the human factors issues and the ACRS comments will be considered in this effort.

EDO 13249 ENCLOSURE 2

ISSUE NO: I.B.1.1(5)
TITLE: Review Implementation of the Upgrading Activities
PRIORITY RANKING: RESOLVED
LEAD OFFICE/DIVISION/BRANCH: OIE/DQASIP/ORPB

ACRS COMMENTS: HIGH

"The Staff states that, since the Office of Inspection and Enforcement (IE) routinely develops and issues inspection procedures which address new or revised regulations and requirements, this item is considered as RESOLVED. Since utilities will be required to submit a new proposed organization and management plan which will be reviewed by the NRC (including a site review), and since the IE Staff will perform annual assessments to assure each utility is satisfactorily meeting NRC management and organization requirements (as identified in the initial NRR plant review), it seems that this issue should remain open until after the first IE audit subsequent to NRC approval of each utility's organization and management plan. The priority assigned to this item should be commensurate with other items in I.B.1.1."

STAFF RESPONSE:

After reviewing the ACRS comment, the staff now classifies this issue as a LICENSING issue because it is not directly related to safety and is part of the IE routine program which develops new inspection procedures as required. As we stated in response to comments on Issue I.B.1.1 (1, 2, 3, 4, 6, 7) this area is being reevaluated by DHFS and the ACRS comments will be considered in this effort.

EDO 13249 ENCLOSURE 2

ISSUE NO: I.C.9
TITLE: Long-Term Program Plan for Upgrading of Procedures
PRIORITY RANKING: MEDIUM
LEAD OFFICE/DIVISION/BRANCH: NRR/DHFS/PTRB

ACRS COMMENTS: HIGH

"The Staff's analysis concludes that resolution of this item might result in a total reduction in public risk of $5x10^4$ man-rem. This is the safety importance at which an item would change from a MEDIUM to a HIGH priority. This risk reduction is based on a uniform 30% improvement in human error, including maintenance, through the dominant accident sequences. This 30% improvement includes improvements due to upgraded Emergency Operating Procedures (EOPs) which are no longer being considered as part of I.C.9. The Staff assumes that 70% of the 30% improvement will result from upgrading other procedures (e.g., normal, abnormal, maintenence, etc.). In view of the high safety importance associated with this item and the ACRS' belief that more than 30% of the total benefits derived from upgrading procedures (including EOPs) will be accrued by upgrading normal, abnormal, and maintenance procedures (excluding EOPs), the ACRS believes that this item should be assigned a HIGH priority. It is also important for the NRC to recognize that improving job design (e.g. procedures, hardware, etc.) is as important as modifying people (e.g., training) in reducing human errors at nuclear power plants."

STAFF RESPONSE:

This issue is one of the issues scheduled for reevaluation by DHFS. If it is determined by DHFS that greater risk reductions should be credited for this "Program Plan," the priority rank will be adjusted accordingly. The ACRS comments will be considered in the DHFS reevaluation.

EDO 13249 ENCLOSURE 2

ISSUE NOs:	I.D.3 I.D.4 I.D.5(5)
TITLES:	• Safety System Status Monitoring • Control Room Design Standard • Disturbance Analysis Systems
PRIORITY RANKING:	MEDIUM
LEAD OFFICE/DIVISION/BRANCH:	NRR/DHFS/HFEB, RES/DFO/HFBR
ACRS COMMENTS:	HIGH

"There is overwhelming evidence that poorly designed control rooms contribute to operator error. Emphasis on the machine side of the man-machine interface (to reduce human error) is as important as the selection and training of plant personnel. In addition, the weak link in reactor operations appears to involve diagnosis of the root cause of a plant's upset condition. Diagnosis involves cognitive skills such as judgment, problem solving, and decision making. Control room operators need all the help they can get in a time of upset plant conditions."

STAFF RESPONSE

We agree with the ACRS comments; however, it would appear that these comments also apply to other related issues which are now requirements in NUREG-0737 Supplement 1, specifically I.D.1, Control Room Design Reviews, and I.D.2, Plant Safety Parameter Display.

The Staff believes that these NUREG-0737 requirements will result in significant improvements in the area of control rooms and that MEDIUM priority is justified for the residual safety issues. The staff will consider the ACRS comments during the resolution of these MEDIUM priority issues.

EDO 13249 ENCLOSURE 2

ISSUE NOs:	I.D.5(1)
TITLE:	Operator Process Communication
PRIORITY RANKING:	RESOLVED
LEAD OFFICE/DIVISION/BRANCH:	RES/DFO/HFBR

ACRS COMMENTS: HIGH

"While RES has issued a Research Information Letter (RIL-124) that provides recommendations for future action related to the operator-machine interface in reactor control rooms, this item should not be considered as RESOLVED until either those actions are carried out or they are deemed unnecessary. The ACRS believes that this item should be assigned a HIGH priority similar to other items under general topic I.D, Control Room Design."

STAFF RESPONSE:

In general, issues for which RES had the lead responsibility were considered RESOLVED if a Research Information Letter was published. In this case, a RIL was published. Furthermore, this issue of operator-machine interface is extensively covered in the "Guidelines for Control Room Design Reviews" (NUREG-0700) which is now a requirement (Issue I.D.1) mandated by NUREG-0737, Supplement 1.

EDO 13249 ENCLOSURE 2

ISSUE NO:	I.D.5(4)
TITLE:	Process Monitoring Instrumentation
PRIORITY RANKING:	RESOLVED
LEAD OFFICE/DIVISION/BRANCH:	RES/DFO/ICBR

ACRS COMMENTS: HIGH

"NRC has been evaluating number of systems (e.g., liquid level monitoring) at the LOCA experimental facilities at ORNL and INEL. While this work is almost completed, this item should remain open until research results are documented and regulatory guidance has been provided to the nuclear power industry. The ACRS believes that completion of this ongoing work should be given a HIGH priority."

STAFF RESPONSE:

The experimental work at ORNL and INEL was completed and documented in NUREG/CR-2673, "Evaluation of Thermal Devices for Detecting In-Vessel Coolant Level in PWRs," and NUREG/CR-2770, "Analysis of the Performance of Westinghouse Reactor Vessel Level Indicating System for Tests at Semiscale." Results were provided to NRR for the approval of the CE and W proposed systems. The regulatory requirements have already been provided by NUREG-0737 as part of Item II.F.2 and most of the PWR owners have installed or committed to install one of the NRC approved systems. Thus, the development of further regulatory guidance is not necessary for resolving this item.

In anticipation of all work being completed by July of this year, we had concluded that this issue should be considered RESOLVED for purposes of prioritization. The final report on the torsional ultrasonic technique is under preparation for publication at the end of FY 1983. Therefore, we will revise the ranking to Note 2.

EDO 13249 ENCLOSURE 2

ISSUE NO: I.F.2(1)
TITLE: Assure the Independence of the Organization Performing the Checking Function
PRIORITY RANKING: LOW
LEAD OFFICE/DIVISION/BRANCH: OIE/DQASIP/QUAB

ACRS COMMENTS MEDIUM or HIGH

"Why is this issue ranked LOW when significant IE resources are being expended on related QA initiatives, particularly those looking at designated representatives and third party audits"?

STAFF RESPONSE:

The determination as to whether some of the individual elements of this issue would be low, medium, or high priority is subjective and, therefore, uncertain. Because of this uncertainty, a clear and definitive decision to dismiss this issue as not worthwhile may be premature. In addition, there is now a congressional directive to study potential improvements in quality assurance programs, therefore, a more comprehensive evaluation of this issue is being included in the Staff's work to determine whether the individual elements of this issue are worthwhile. Therefore, this isssue has been tentatively reclassified as MEDIUM priority.

EDO 13249 ENCLOSURE 2

ISSUE NO: I.F.2(4)
TITLE: Establish Criteria for Determining QA Requirements for Specific Classes of Equipment
PRIORITY RANKING: LOW
LEAD OFFICE/DIVISION/BRANCH: OIE/DQASIP/QUAB

ACRS COMMENTS: MEDIUM or HIGH

"Why is this issue ranked LOW when resources are being expended in this area? This issue is being addressed by the study required under P.L. 97.415, Section 13b(1). The Commission is required to report to the Congress with the results of that study by April 1984. The Staff has scheduled study completion accordingly. IE also has ongoing research related to graded QA approach to assuring plant quality. In addition, the ACRS has expressed its interest in this general area (Ref. NUREG-0963, Section 2.3)."

STAFF RESPONSE:

The ACRS is correct that resources are being expended in this area and that OIE has ongoing research related to graded QA approach (i.e., Item I.F.1, "Expand QA List," which has a HIGH priority ranking). Item I.F.1 will be addressed before Item I.F.2(4) which is considered. In fact, resolution of Item I.F.1 may also help resolve Item I.F.2(4).

The issue raised in Item I.F.2(4) is being addressed, in addition to other issues, by the study required under P.L. 97-415, Section 13b(1).

EDO 13249 ENCLOSURE 2

ISSUE NO:	I.F.2(5)
TITLE:	Establish Qualification Requirements for QA and QC Personnel
PRIORITY RANKING:	LOW
LEAD OFFICE/DIVISION/BRANCH:	OIE/DQASIP/QUAB
ACRS COMMENTS:	MEDIUM or HIGH

"Why is this issue ranked LOW when significant IE resources are being expended on related QA initiatives, particularly those related to the qualification and certification of QA/QC personnel?"

STAFF RESPONSE:

The determination as to whether some of the individual elements of this issue would be low, medium or high priority is subjective and, therefore, uncertain. Because of this uncertainty, a clear and definitive decision to dismiss this issue as not worthwhile may be premature. In addition, there is now a congressional directive to study potential improvements in quality assurance programs, therefore, a more comprehensive evaluation of this issue is being included in the Staff's work to determine whether the individual elements of this issue are worthwhile. Therefore, this issue has been tentatively reclassified as MEDIUM priority.

EDO 13249 ENCLOSURE 2

ISSUE NO:	II.A.1
TITLE:	Siting Policy Reformulation
PRIORITY RANKING:	MEDIUM
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/SAB
ACRS COMMENTS:	LOW

"Because of the lack of applications for construction permits for new nuclear power plants, and the existence of a regulatory basis for reviewing and approving sites for such plants, the ACRS recommends that consideration be given to downgrade the priority of this issue from MEDIUM to LOW."

STAFF RESPONSE:

The current lack of new CP applications eliminates any immediate need for siting policy reformulation. As a result, the issue was placed in the MEDIUM priority category instead of being designated HIGH priority. A LOW priority ranking was considered inappropriate since it is highly unlikely that LOW priority issues would receive any Staff attention in the forseeable future. The Staff believes that it would be prudent to have a reformulated siting policy ready for use in the review of future CP applications.

EDO 13249 ENCLOSURE 2

ISSUE:	II.B.5(3)
TITLE:	Effects of Hydrogen Burning and Explosions on Containment Structure
PRIORITY RANKING:	MEDIUM
LEAD OFFICE/DIVISION/BRANCH:	RES/DAE/CSRB
ACRS COMMENTS:	HIGH

"Why is this ranked MEDIUM in view of the fact that extensive and expensive research on this subject is either in progress or planned"?

STAFF RESPONSE:

Most of the work on hydrogen is being done under USI A-48, "Hydrogen Control Measures and the Effects of Hydrogen Burns on Safety Equipment," which is receiving considerable Staff attention. Issue II.B.5(3) was prioritized on the safety significance and cost to mitigate a steam explosion which were not included in the scope of USI A-48. Furthermore, generic safety issues are not prioritized solely on the extent of NRC resources needed, but on total NRC and industry resources. NRC resources are usually much smaller than the industry resources and, therefore, have only a small effect on the priority ranking. As explained in the Introduction to NUREG-0933 the Staff believes this is the proper basis for prioritization.

EDO 13249 ENCLOSURE 2

ISSUE NO:	II.E.2.3
TITLE:	Uncertainties in Performance Predictions
PRIORITY RANKING:	LOW
LEAD OFFICE/DIVISION/BRANCH:	NRR/DSI/RSB
ACRS COMMENTS:	MEDIUM

"Higher priority should be given to the evaluation of uncertainties for small breaks."

STAFF RESPONSE:

The placement of this issue in the low priority category was based largely on the relatively low probability of a small break plus a worst-case single failure, the fact that the small break LOCA analyses is seldom limiting (which implies considerable margin to small-break-derived limits), and the fact that this issue is largely duplicated by II.K.3 (30). If the results of II.K.3 (30) indicate that further work is called for, this issue will be reevaluated.

EDO 13249 ENCLOSURE 2

ISSUE NO:	II.E.6.1
TITLE:	Test Adequacy Study
PRIORITY RANKING:	MEDIUM
LEAD OFFICE/DIVISION/BRANCH:	NRR/DE/MEB

ACRS COMMENTS: HIGH

"Disagree with the reliability initially assigned to new valves operating under adverse or design conditions. Also, the Staff's analysis assumes that an improved testing program would reduce valve failures by 5 percent. Can this number be justified?

Improved inservice testing of valves should make use of baseline data obtained from the valve in its new condition, e.g., a strip chart recording taken as the valve was cycled would show the approach to inoperability better than the leak rate tests or periodic cycling that are now used. In addition, effort should be made to develop dynamic tests for both new and inservice valves to assure their operability under design loads."

STAFF RESPONSE:

Although the potential for improvement may be high, we believe that the effect of new requirements by NRC is limited. MEDIUM priority means that resources will still be assigned to its resolution in the future. Estimates of initial reliability and possible reductions in failure rates will be part of the resolution process. We will pass the ACRS suggestions on to the lead Branch for consideration in their future work.

EDO 13249 ENCLOSURE 2

ISSUE NO:	II.J.3.1
TITLE:	Organization and Staffing to Oversee Design and Construction
PRIORITY RANKING:	Covered in I.B.1.1 (MEDIUM)
LEAD OFFICE/DIVISION/BRANCH:	NRR/DHFS/LQB

ACRS COMMENTS: HIGH

"See comments related to I.B.1.1."

STAFF RESPONSE:

See staff comments related to I.B.1.1.

EDO 13249 ENCLOSURE 2

ISSUE NO:	III.A.3.4
TITLE:	Nuclear Data Link
PRIORITY RANKING:	MEDIUM
LEAD OFFICE/DIVISION/BRANCH:	OIE/DEPER/IRDB
ACRS COMMENTS:	DROP

"The ACRS believes that the proposed Nuclear Data Link should not be implemented."

STAFF RESPONSE:

The Staff's prioritization efforts did not prejudge issues regarding whether they should be implemented or not implemented. The effort was to determine if staff resources should be spent on the various issues.

As was stated in NUREG-0933, we did not believe that the potential risk reductions and costs were well enough defined to clearly dismiss this issue. Therefore, we concluded that further staff effort was justified. However, the Staff was recently advised that no further resources will be provided by Congress for the continuation of the NDL project; the project has been terminated.

EDO 13249 ENCLOSURE 2

ISSUE NO:	III.D.2.1
TITLE:	Radiological Monitoring of Effluents
PRIORITY RANKING:	LOW
LEAD OFFICE/DIVISION/BRANCH:	NRR/DSI/METB
ACRS COMMENTS:	MEDIUM or HIGH

"The ACRS is concerned that the NRC regulations currently do not require that monitors for airborne effluents be in duplicate. As a result, when such monitors are out of service, little or no information on release to the environment would be available. Although frequently both low-range (for routine releases) and high-range (for accidental releases) monitors are available in the same effluent line, the low-range units would provide no useful information for high-range releases. In addition, the Subcommittee believes that the high-range instruments should contain the capabilities for specific radionuclide analyses."

STAFF RESPONSE

This issue does not concern reliability of monitoring, as important as that may be, but the capability to distinguish the radioisotopic content of effluents. As discussed, the Staff believes this proposal would not significantly decrease risk and would incur substantial cost.

The Staff's position in Regulatory Guide 1.97, which was extensively reviewed with the ACRS, does not call for redundant high-range monitors for the detection of airborne radioactive releases. The Staff is currently working on a revision to STS 3.3.3.6 (Accident Monitoring Instrumentation) that would require an LCO mode upon loss of the high-range monitor.

The Staff believes that, with this small restriction, the reliability of effluent monitors is adequate. If the ACRS disagrees, they may wish to propose a generic issue on monitor reliability.

The consideration of installation of high range instruments with specific radionuclide analysis capability will only lower the priority ranking of the issue because: (1) these instruments would not contribute to the reduction in the frequency of core-melts and the resultant public risk, and (2) the costs for installing the necessary instruments would add significantly to the overall cost to resolve the issue, further reducing the safety priority score.

FROM:
ACRS: R.F. Fraley

TO:
Dircks

ACTION CONTROL	DATES
COMPL DEADLINE	~~7/7/83~~ 8/26/83
INTERIM REPLY	
FINAL REPLY	
FILE LOCATION	

CONTROL NO. 13249

DATE OF DOCUMENT 6/20/83

PREPARE FOR SIGNATURE OF:
- ☐ CHAIRMAN
- ☒ EXECUTIVE DIRECTOR
- OTHER

DESCRIPTION ☐ LETTER ☒ MEMO ☐ REPORT ☐ OTHER

ACRS comments on the prioritization of generic issues

SPECIAL INSTRUCTIONS OR REMARKS

ASSIGNED TO	DATE
Denton, NRR	6/22/83
Speis, DST	6/22/83

INFORMATION ROUTING

Dircks	Denton/Case
Roe	1. Eisenhut
Rehm	2. Vollmer
Stello	3. Mattson
DeYoung	4. Thompson
Davis	5. Snyder
Minogue	6. Grace
Heltemes	PPAS
GCunningham	
Central Files	

NRC FORM 232 (6-80)

EXECUTIVE DIRECTOR FOR OPERATIONS
PRINCIPAL CORRESPONDENCE CONTROL

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

June 20, 1983

MEMORANDUM FOR: W. J. Dircks
Executive Director for Operations

FROM: R. F. Fraley, Executive Director
Advisory Committee on Reactor Safeguards

SUBJECT: ACRS COMMENTS ON THE PRIORITIZATION OF GENERIC ISSUES

During November 1982, the NRC Staff requested that the ACRS review the following with regard to the prioritization of generic issues:

- Adequacy of the numerical methodology, described in Draft NUREG-0933, that was used in prioritizing generic issues.
- Adequacy of the application of the methodology to individual generic issues.

During its 273rd meeting, January 6-8, 1983, the ACRS completed its review of the adequacy of the numerical methodology and transmitted its comments to Chairman Palladino in a letter dated January 11, 1983.

During its 278th meeting, June 9-11, 1983, the ACRS performed a partial review of the adequacy of the application of the methodology to individual generic issues. Results of this partial review are contained in the following attachments:

- Attachment 1 lists those items for which the ACRS agrees with the priority rankings proposed by the NRC Staff.
- Attachment 2 includes a list of items for which the ACRS agrees with the priority rankings proposed by the NRC Staff, but has comments.
- Attachment 3 contains a list of items for which the ACRS disagrees with the NRC Staff's proposed priority rankings along with the reasons therefor.

The ACRS will continue its review of the adequacy of the proposed priority rankings for the remaining generic issues and will provide additional comments as they become available.

It is requested that the NRC Staff provide written responses to the ACRS comments identified in Attachments 2 and 3. The ACRS may review the adequacy of the NRC Staff's responses during one of its future meetings.

Attachments: As Stated

June 20, 1983

ATTACHMENT 1

LIST OF ITEMS FOR WHICH THE

ACRS AGREES WITH THE PRIORITY RANKINGS PROPOSED

BY THE NRC STAFF

New Generic Issues	Title
2	Failure of Protective Devices on Essential Equipment
3	Set Point Drift in Instrumentation
5	Design Check and Audit of Balance-of-Plant Equipment
6	Separation of Control Rod from Its Drive and BWR High Rod Worth Events
11	Turbine Disc Cracking
12	BWR Jet Pump Integrity
14	PWR Pipe Cracks
15	Radiation Effects on Reactor Vessel Supports
16	BWR Main Steam Isolation Valve Leakage Control Systems
19	Safety Implications of Nonsafety Instrument and Control Power Supply Bus
20	Effects of Electromagnetic Pulse on Nuclear Plant Systems

ATTACHMENT 1 (Cont'd)

New Generic Issues (Cont'd)	Title
26	Diesel Generator Loading Problems Related to SIS Reset on Loss of Offsite Power
28	Pressurized Thermal Shock
29	Bolting Degradation or Failure in Nuclear Power Plants

Task Action Plan Items	Title
A-14	Flaw Detection
A-15	Primary Coolant System Decontamination and Steam Generator Chemical Cleaning
A-19	Digital Computer Protection System
A-20	Impacts of the Coal Fuel Cycle
A-22	PWR Main Steamline Break - Core, Reactor Vessel, and Containment Building Response
A-25	Non-Safety Loads on Class IE Power Sources
A-28	Increase in Spent Fuel Pool Storage Capacity
A-32	Missile Effects
A-33	NEPA Review of Accident Risks
A-34	Instruments for Monitoring Radiation and Process Variables During Accidents

ATTACHMENT 1 (Cont'd)

Task Action Plan Items (Cont'd)	Title
A-35	Adequacy of Offsite Power Systems
A-37	Turbine Missiles
A-38	Tornado Missiles
B-3	Event Categorization
B-5(a)	Ductility of Two Way Slabs and Shells
B-7	Secondary Accident Consequence Modeling
B-9	Electrical Cable Penetrations of Containment
B-14	Study of Hydrogen Mixing Capability in Containment Post-LOCA
B-21	Core Physics
B-22	LWR Fuel
B-23	LMFBR Fuel
B-24	Seismic Qualification of Electrical Mechanical Components
B-25	Piping Benchmark Problems
B-28	Radionuclide/Sediment Transport Program
B-29	Effectiveness of Ultimate Heat Sinks
B-31	Dam Failure Model
B-33	Dose Assessment Methodology
B-34	Occupational Radiation Exposure Reduction
B-35	Confirmation of Appendix I Models for Calculations of Releases of Radioactive Materials in Gaseous and Liquid Effluents from Light-Water-Cooled Power Reactors

ATTACHMENT 1 (Cont'd)

Task Action Plan Items (Cont'd)	Title
B-37	Chemical Discharges to Receiving Waters
B-38	Reconnaissance Level Investigations
B-39	Transmission Lines
B-40	Effects of Power Plant Entrainment on Plankton
B-41	Impacts on Fisheries
B-42	Socioeconomic Environmental Impacts
B-43	Value of Aerial Photographs for Site Evaluation
B-44	Forecasts of Generating Costs of Coal and Nuclear Plants
B-45	Need for Power - Energy Conservation
B-48	BWR CRD Mechanical Failure (Collet Housing)
B-49	Inservice Inspection Criteria and Corrosion Prevention Criteria for Containments
B-51	Assessment of Inelastic Analysis Techniques for Equipment and Components
B-55	Improved Reliability of Target Rock Safety-Relief Valves
B-56	Diesel Reliability
B-57	Station Blackout
B-58	Passive Mechanical Failures
B-60	Loose-Parts Monitoring System

ATTACHMENT 1 (Cont'd)

Task Action Plan Items (Cont'd)	Title
B-62	Reexamination of Technical Bases for Establishing SLs, LSSSs, and Reactor Protection System Trip Functions
B-64	Decommissioning of Reactors
B-67	Effluent and Process Monitoring Instrumentation
B-68	Pump Overspeed During LOCA
B-70	Power Grid Frequency Degradation and Effect on Primary Coolant Pumps
B-71	Incident Response
B-72	Health Effects and Life Shortening from Uranium and Coal Fuel Cycles
B-73	Monitoring for Excessive Vibration Inside the Reactor Pressure Vessel
C-2	Study of Containment Depressurization by Inadvertent Spray Operation to Determine Adequacy of Containment External Design Pressure
C-8	Main-Steamline Leakage Control Systems
C-11	Assessment of Failure and Reliability of Pumps and Valves
C-12	Primary System Vibration Assessment
C-13	Non-Random Failures
C-14	Storm Surge Model for Coastal Sites
C-15	NUREG Report for Liquids Tank Failure Analysis

ATTACHMENT 1 (Cont'd)

Task Action Plan Items (Cont'd)	Title
C-16	Assessment of Agricultural Land in Relation to Power Plant Siting and Cooling System Selection
C-17	Interim Acceptance Criteria for Solidification Agents for Radioactive Solid Wastes
D-3	Control Rod Drop Accident

TMI Action Plan Items	
I.F.1	Expand QA List
I.F.2(2)	Include QA Personnel in Review and Approval of Plant Procedures
I.F.2(3)	Include QA Personnel in All Design, Construction, Installation, Testing, and Operation Activities
I.F.2(6)	Increase the Size of Licensees' QA Staff
I.F.2(7)	Clarify that the QA Program is a Condition of the Construction Permit and Operating License
I.F.2(8)	Compare NRC QA Requirements with Those of Other Agencies
I.F.2(9)	Clarify Organizational Reporting Levels for the QA Organization
I.F.2(10)	Clarify Requirements for Maintenance of "As-Built" Documentation
I.F.2(11)	Define Role of QA in Design and Analysis Activities
II.A.2	Site Evaluation of Existing Facilities
II.B.5(1)	Behavior of Severely Damaged Fuel
II.B.5(2)	Behavior of Core Melt

ATTACHMENT 1 (Cont'd)

TMI Action Plan Items (Cont'd)	Title
II.B.6	Risk Reduction for Operating Reactors at Sites with High Population Densities
II.B.7	Analysis of Hydrogen Control
II.B.8	Rulemaking Proceeding on Degraded-Core Accidents
II.C.1	Interim Reliability Evaluation Program
II.C.2	Continuation of Interim Reliability Evaluation Program
II.C.3	Systems Interaction
II.C.4	Reliability Engineering
II.D.2	Research on Relief and Safety Valve Requirements
II.E.1.3	Update Standard Review Plan and Develop Regulatory Guide
II.E.3.2	Systems Reliability
II.E.3.3	Coordinated Study of Shutdown Heat Removal Requirements
II.E.3.4	Alternate Concepts Research
II.E.3.5	Regulatory Guide
II.E.4.3	Integrity Check
II.E.4.4(1)	Issue Letter to Licensees Requesting Limited Purging
II.E.4.4(2)	Issue Letter to Licensees Requesting Information on Isolation Valve
II.E.4.4(3)	Issue Letter to Licensees on Valve Operability
II.E.4.4(4)	Evaluate Purging and Venting During Normal Operation
II.E.4.4(5)	Issue Modified Purging and Venting Requirement

ATTACHMENT 1 (Cont'd)

TMI Action Plan Items (Cont'd)	Title
II.F.3	Instruments for Monitoring Accident Conditions
II.H.1	Maintain Safety of TMI-2 and Minimize Environmental Impact
II.H.2	Obtain Technical Data on the Conditions Inside the TMI-2 Containment Structure
II.H.3	Evaluate and Feed Back Information Obtained from TMI-2
II.H.4	Determine Impact of TMI on Socioeconomic and Real Property Values
II.J.1.1	Establish a Priority System for Conducting Vendor Inspections
II.J.1.2	Modify Existing Vendor Inspection Program
II.J.1.3	Increase Regulatory Control Over Present Non-Licensees
II.J.1.4	Assign Resident Inspectors to Reactor Vendors and Architect-Engineers
II.J.2.1	Reorient Construction Inspection Program
II.J.2.2	Increase Emphasis on Independent Measurement in Construction Inspection Program
II.J.2.3	Assign Resident Inspectors to All Construction Sites
II.J.3.1	Organization and Staffing to Oversee Design and Construction
II.J.3.2	Issue Regulatory Guide
II.J.4.1	Revise Deficiency Reporting Requirements
III.A.1.3(1)	Workers
III.A.1.3(2)	Public

ATTACHMENT 1 (Cont'd)

TMI Action Plan Items (Cont'd)	Title
III.A.3.1(1)	Define NRC Role in Emergency Situations
III.A.3.1(2)	Revise and Upgrade Plans and Procedures for the NRC Emergency Operations Center
III.A.3.1(3)	Revise Manual Chapter 0502, Other Agency Procedures, and NUREG-0610
III.A.3.1(4)	Prepare Commission Paper
III.A.3.1(5)	Revise Implementing Procedures and Instructions for Regional Offices
III.A.3.2	Improve Operations Centers
III.A.3.3(1)	Install Direct Dedicated Telephone Lines
III.A.3.3(2)	Obtain Dedicated, Short-Range Radio Communication Systems
III.A.3.4	Nuclear Data Link
III.A.3.5	Training, Drills, and Tests
III.A.3.6	Interaction of NRC and Other Agencies
III.B.1	Transfer of Responsibilities to FEMA
III.B.2(1)	The Licensing Process
III.B.2(2)	Federal Guidance
III.D.1.2	Radioactive Gas Management
III.D.1.3(1)	Decide Whether Licensees Should Perform Studies and Make Modifications
III.D.1.3(2)	Review and Revise SRP
III.D.1.3(3)	Require Licensees to Upgrade Filtration Systems

ATTACHMENT 1 (Cont'd)

TMI Action Plan Items (Cont'd)	Title
III.D.1.3(4)	Sponsor Studies to Evaluate Charcoal Adsorber
III.D.2.4(1)	Study Feasibility of Environmental Monitors
III.D.2.4(2)	Place 50 TLDs Around Each Site
III.D.2.6	Independent Radiological Measurements
III.D.3.1	Radiation Protection Plans
III.D.3.2(1)	Amend 10 CFR 20
III.D.3.2(2)	Issue a Regulatory Guide
III.D.3.2(3)	Develop Standard Performance Criteria
III.D.3.2(4)	Develop Method for Testing and Certifying Air-Purifying Respirators
III.D.3.5(1)	Develop Format for Data to be Collected by Utilities Regarding Total Radiation Exposure to Workers
III.D.3.5(2)	Investigative Methods of Obtaining Employee Health Data by Nonlegislative Means
III.D.3.5(3)	Revise 10 CFR 20
IV.C.1	Extend Lessons Learned from TMI-2 to Other NRC Programs
IV.E.1	Expand Research on Quantification of Safety Decision-Making
IV.E.2	Plan for Early Resolution of Safety Issues
IV.E.3	Plan for Resolving Issues at the CP Stage
IV.E.4	Resolve Generic Issues by Rulemaking
IV.E.5	Assess Currently Operating Reactors
IV.H.1	NRC Participation in the Radiation Policy Council

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ATTACHMENT 2

LIST OF ITEMS FOR WHICH THE ACRS
AGREES WITH THE PRIORITY RANKINGS
PROPOSED BY THE NRC STAFF, BUT WITH COMMENTS

Issue No: 7

Title: Failures Due to Flow-Induced Vibrations

Proposed NRC Staff Priority: DROP

ACRS Comments: The Staff makes an adequate case for the types of failures they consider. However, they do not appear to have considered the problem of flow-induced breaking loose of flow deflectors of the sort that the Office for Analysis and Evaluation of Operational Data (AEOD) has brought out.

Issue No: 21

Title: Vibration Qualification of Equipment

Proposed NRC Staff Priority: Covered in USI A-46

ACRS Comments: The scope appears to be too narrow. A review of the dynamic loads to be included should be performed. Specifically, flow-induced vibrations should be evaluated and valve dynamic loads under faulted conditions (i.e.: rapid closure of main steam isolation valves under main steamline break) should be included. It should be noted that the scope of USI A-46 does not appear to include this issue as indicated by NUREG-0933.

ATTACHMENT 2 (Cont'd)

Issue No: 23

Title: Reactor Coolant Pump Seal Failures

Proposed NRC Staff Priority: HIGH

ACRS Comments: Coolant pump seal failure is a part of the small LOCA generic category. The utilities need to improve their ability to forstall these by design, and by better failure symptoms to signal for corrective maintenance actions. This does not appear to be a matter for NRC Staff work other than surveillance of licensee progress. Seal failures are not of more concern than LOCAs from power operated relief valve leaks or small line failures. The rate of coolant loss is the principal issue. Suggest that minor level of Staff effort be assigned.

Issue No: A-13

Title: Snubber Operability Assurance

Proposed NRC Staff Priority: RESOLVED

ACRS Comments: The Staff has imposed inspection requirements on the licensed plants. Effectiveness of these measures is not yet known. What frequency of snubber malfunction is tolerable? Does the test and inspection requirements satisfy the reliability requirements? To resolve this issue would require a study of failure trends over a period of time. Should be assigned to the Institute of Nuclear Power Operations (INPO) for reporting. Does not need Staff resources. This is only resolved in the sense that the NRC Staff believes that their requirements will make the failure rates OK. Should be listed as "resolved with qualifications".

ATTACHMENT 2 (Cont'd)

Issue No: A-18

Title: Pipe Rupture Design Criteria

Proposed NRC Staff Priority: DROP

ACRS Comments: This was never on the ACRS generic list but, because of the concern for pipe whip restraint problems of reliability and inspection access, it deserves attention. The Staff is ready to take a position on Westinghouse PWR primary piping that would eliminate double-ended pipe breaks as a design basis. To be useful, this action would have to extend to all PWRs and should address other piping systems which represent the bulk of the problem.

Not worthy of effort unless the results can be made available within a couple of years. Existing Westinghouse PWRs would probably not be altered by a change in criteria. The problem needs attention mainly because the case for reliable pipe whip restraints is weak and it would be better to build the safety argument on ductile inelastic response of piping systems. (The matter of most importance is the mode of rupture and potential locations. Not all restraints need be eliminated.)

Issue No: A-21

Title: Main Steamline Break Inside Containment - Evaluation of Environmental Conditions for Equipment Qualification

Proposed NRC Staff Priority: LOW

ACRS Comments: The NRC Staff has codified the interim criteria (NUREG-0588) in the new Rule, 10 CFR 50.49. The environmental conditions inside containment appear to be based on successful operation of isolation devices such as the Main Steam Isolation Valves (MSIVs), turbine stop valves, and control valves to preclude the blowdown of more than one steam generator inside containment. The reliability of these valves to perform their isolation function should be evaluated. The ACRS will follow implementation.

ATTACHMENT 2 (Cont'd)

Issue No: A-23

Title: Containment Leak Testing

Proposed NRC Staff Priority: REGULATORY IMPACT ISSUE

ACRS Comments: The ACRS agrees with the Staff's proposed priority, but only within the strict context of the issue as described, not with the broader context of the title of the issue.

Issue No: B-1

Title: Environmental Technical Specifications

Proposed NRC Staff Priority: ENVIRONMENTAL ISSUE (RESOLVED)

ACRS Comments: The ACRS agrees with the Staff's proposed priority. However, it urges that, in revising these Specifications, the NRC Staff attempt to minimize the accompanying work load on the utilities. Data that are not necessary should not be required. Consideration should also be given to changing the title of this issue. The current title could imply that it pertains to the environmental qualification of safety-related nuclear power plant equipment.

Issue No: B-5(b)

Title: Buckling Behavior of Steel Containments

Proposed NRC Staff Priority: MEDIUM

ACRS Comments: If buckling could lead to early failure of the containment in some of the core-melt scenarios, the consequences could be changed more than in the analyses limited only to design basis accidents. This might justify a higher priority. However, research is now under way and probably cannot be accelerated much.

ATTACHMENT 2 (Cont'd)

Issue No: B-6

Title: Loads, Load Combinations, and Stress Limits

Proposed NRC Staff Priority: HIGH

ACRS Comments: This continues to be a matter of controversy between the Staff and licensees. It is a broader aspect of the issue A-18, "Pipe Rupture Design Criteria," applying to all structures. This has to be dealt with probabilistically. The work to date is confusing and the requirements lack consistency. Needs Staff work but should address all types of structures (piping, containments, supports, equipment, instrumentation, and controls) as influenced by structural loads.

Issue No: B-16

Title: Protection Against Postulated Piping Failures in Fluid Systems Outside Containment

Proposed NRC Staff Priority: Covered in A-18 which has a priority ranking of DROP.

ACRS Comments: Requirements for these piping failures have been in place for a long time but questions have been raised about the interpretation and applicability of the requirements to older plants. The issue needs clarification. The Interim Reliability Evaluation Program (IREP) studies should indicate what is needed. No current basis exists for judging need for priority attention.

ATTACHMENT 2 (Cont'd)

Issue No: B-26

Title: Structural Integrity of Containment Penetrations

Proposed NRC Staff Priority: MEDIUM

ACRS Comments: If the research on penetration integrity in severe accidents shows that the penetrations are weak spots and containment is breached at lower pressure than gross failure, the consequence estimates in the Staff's analyses may be increased significantly. The cost of a fix might also be increased greatly. For these reasons, it is hard to prioritize the narrow issue defined here. MEDIUM may be OK for now, but the more general (and probably more important) issue of containment and penetration is clearly of HIGH priority.

Issue No: B-27

Title: Implementation and Use of Subsection NF of the ASME Code

Proposed NRC Staff Priority: LICENSING ISSUE

ACRS Comments: This requirement for structural supports is intended to assure adequacy of materials on which Code vessels are supported. This needs follow-up by the Office of Inspection and Enforcement (IE) and should be covered in the Interim Reliability Evaluation Program studies.

Issue No: B-47

Title: Inservice Inspection of Support Classes 1, 2, 3 and MC Components

Proposed NRC Staff Priority: DROP

ACRS Comments: This issue is not clear. The need for inspection depends on the safety concerns. The Staff needs to clarify the issue.

ATTACHMENT 2 (Cont'd)

Issue No: C-1

Title: Assurance of Continuous Long-Term Capability of Hermetic Seals on Instrumentation and Electrical Equipment

Proposed NRC Staff Priority: RESOLVED

ACRS Comments: This problem appears to be resolved by the codification of NUREG-0588 and the Division of Operating Reactor (DOR) Guidelines. Requirements have been established and are being implemented. Apparently, during the equipment qualification evaluation, maintenance procedures are reviewed. However, details of the NRC Staff requirements are not known. In addition, this issue appears to be limited to moisture ingress through damaged hermetic seals. Other areas, such as moisture ingress through conduits should be evaluated.

Issue No: C-7

Title: PWR System Piping

Proposed NRC Staff Priority: RESOLVED

ACRS Comments: The interpretation of this issue is unclear. BWR piping systems have problems but PWRs have no identifiable difficulties unless they are in pressure-letdown circuits.

Issue No: C-10

Title: Effective Operation of Containment Sprays in a LOCA

Proposed NRC Staff Priority: RESOLVED

ACRS Comments: It is not clear that the evaluation of damage to equipment by inadvertent actuation has been fully resolved. The documents cited as resolving this issue (SRP 6.5.2 and ANSI/ANS 56.5-1979) do not address damage to equipment. It should be noted also that chemical addition systems for containment spray are considered optional.

ATTACHMENT 2 (Cont'd)

Issue No: III.D.1.4

Title: Radwaste System Design Features to Aid in Accident Recovery and Decontamination

Proposed NRC Staff Priority: DROP

ACRS Comments: Experience shows that radwaste systems in existing nuclear power plants are inadequate to meet post-accident decontamination requirements. Although this situation does not justify backfitting such systems on existing plants, the ACRS believes that this issue should be "flagged" for reconsideration if and when applications for construction permits are forthcoming.

June 20, 1983

ATTACHMENT 3

LIST OF ITEMS FOR WHICH THE ACRS

DISAGREES WITH THE PRIORITY RANKINGS

PROPOSED BY THE NRC STAFF

Issue No: B-32

Title: Ice Effects on Safety-Related Water Supplies

Proposed NRC Staff Priority: LICENSING ISSUE

ACRS Recommendation: MEDIUM

Reasons: The ACRS believes that interference with supply of cooling water to safety-related equipment could decrease the reliability of ultimate heat sink to adequately cool the core. An evaluation is required to determine what contribution a reduction in ultimate heat sink reliability makes to overall core melt.

Issue No: I.F.2(1)

Title: Assure the Independence of the Organization Performing the Checking Function

Proposed NRC Staff Priority: LOW

ACRS Recommendation: MEDIUM or HIGH

Reasons: Why is this issue ranked LOW when significant IE resources are being expended on related QA initiatives, particularly those looking at designated representatives and third party audits?

ATTACHMENT 3 (Cont'd)

Issue No: I.F.2(4)

Title: Establish Criteria for Determining QA Requirements for Specific Classes of Equipment

Proposed NRC Staff Priority: LOW

ACRS Recommendation: MEDIUM or HIGH

Reasons: Why is this issue ranked LOW when resources are being expended in this area? This issue is being addressed by the study required under P.L. 97.415, Section 13b(1). The Commission is required to report to the Congress with the results of that study by April 1984. The Staff has scheduled study completion accordingly. IE also has ongoing research related to a graded QA approach to assuring plant quality. In addition, the ACRS has expressed its interest in this general area (Ref. NUREG-0963, Section 2.3).

Issue No: I.F.2(5)

Title: Establish Qualification Requirements for QA and QC Personnel

Proposed NRC Staff Priority: LOW

ACRS Recommendation: MEDIUM or HIGH

Reasons: Why is this issue ranked LOW when significant IE resources are being expended on related QA initiatives, particularly those related to the qualification and certification of QA/QC personnel?

ATTACHMENT 3 (Cont'd)

Issue No:	II.A.1
Title:	Siting Policy Reformulation
Proposed NRC Staff Priority:	MEDIUM
ACRS Recommendation:	LOW
Reasons:	Because of the lack of applications for construction permits for new nuclear power plants, and the existence of a regulatory basis for reviewing and approving sites for such plants, the ACRS recommends that consideration be given to downgrade the priority of this issue from MEDIUM to LOW.

Issue No:	II.B.5(3)
Title:	Effects of Hydrogen Burning and Explosions on Containment Structure
Proposed NRC Staff Priority:	MEDIUM
ACRS Recommendation:	HIGH
Reasons:	Why is this ranked MEDIUM in view of the fact that extensive and expensive research on this subject is either in progress or planned?

ATTACHMENT 3 (Cont'd)

Issue No: III.D.2.1

Title: Radiological Monitoring of Effluents

Proposed NRC Staff Priority: LOW

ACRS Recommendation: MEDIUM or HIGH

Reasons: The ACRS is concerned that the NRC regulations currently do not require that monitors for airborne effluents be in duplicate. As a result, when such monitors are out of service, little or no information on release to the environment would be available. Although frequently both low-range (for routine releases) and high-range (for accidental releases) monitors are available in the same effluent line, the low-range units would provide no useful information for high-range releases. In addition, the Subcommittee believes that the high-range instruments should contain the capabilities for specific radionuclide analyses.