

D920311

MEMORANDUM FOR: James M. Taylor  
Executive Director for Operations

FROM: David A. Ward  
Chairman

SUBJECT: PROPOSED PRIORITY RANKINGS OF GENERIC  
ISSUES: SEVENTH GROUP

During the 383rd meeting of the Advisory Committee on Reactor Safeguards, March 5-7, 1992, we reviewed the priority rankings proposed by the staff for the group of generic issues identified in Table A, attached. During this meeting, we had the benefit of discussions with representatives of the NRC staff.

We have deferred action on Generic Issue 138, "Deinerting of BWRs with Mark I and II Containments During Power Operations Upon Discovery of Reactor Cooling System Leakage or a Train of a Safety System Inoperable," because the staff's evaluation is poorly written and the concerns to be addressed are inadequately described. We request that the staff revise its evaluation of this issue and submit it to us for consideration.

Generic Issue A-19, "Digital Computer Protection System," is categorized as a "Licensing Issue." We believe that the staff should revise its evaluation of this issue to properly describe the current situation with respect to the use of reactor protection systems using digital technology. We are particularly concerned by the statement that the use of digital technology will not result in a change in the safety of current nuclear power plants. This is an improper basis for the "Licensing Issue" classification, given the extraordinary energy being expended by the staff, the ACRS, and the industry to understand the novel safety implications (positive and negative) of this technology.

Our comments on various generic issues considered during this meeting are contained in the following attachments:

Attachment 1 lists those generic issues for which we agree with the proposed priority rankings.

Attachment 2 includes those issues for which we agree with the proposed priority rankings, but have comments.

Attachment 3 identifies those issues for which we disagree with the proposed priority ranking.

We request that the NRC staff provide written responses to our comments. We will continue our review of the proposed priority rankings for additional generic issues when they become available.

Attachments:

<p style="text-align: center;">TABLE A</p> <p style="text-align: center;">GENERIC ISSUES REVIEWED BY THE ACRS DURING THE 383RD, MARCH 5-7, 1992, MEETING</p>				
Generic Issue Number	Title	Priority Ranking	Proposed by	Reference Document
24	Automatic Emergency Core Cooling System Switch-over to Recirculation	MEDIUM		Memorandum from E. S. Beckjord for W. Minners, July 23, 1991
38	Potential Recirculation System Failure as a Consequence of Ingestion of Containment Paint Flakes or Other Fine Debris	DROP	(The safety concerns of this Issue were addressed in the presolution of USI A-43, "Containment Emergency Sump Performance")	Memorandum from E. S. Beckjord for W. Minners, August 16, 1991
72	Control Rod Drive Guide Tube Support Pin Failures	DROP	(Control rod drive guide tube support pins susceptible to stress corrosion cracking have been	Memorandum from E. S. Beckjord for B. M. Morris, October 9, 1990



	b	b(Since the safety	bE. S. Beckjord for
	b	bconcerns of this	bW. Minners and
	b	bIssue are being ad-	bB. Sheron, Septem-
	b	baddressed in the Acci-	bber 6, 1990
	b	bident Management	b
	b	belement of the NRC	b
	b	bplan for the closure	b
	b	bof severe accident	b
	b	bissues, as described	b
	b	bpin SECY-88-147 and	b
	b	bGeneric Letter 88-20,	b
	b	bSupplement 2, this	b
	b	bIssue will not be	b
	b	bpursued separately)	b
	b	b	b
118	bTendon Anchor Head	b RESOLVED	bMemorandum from
	bFailure	b	bE. S. Beckjord
	b	b	bfor W. Minners,
	b	b	bJanuary 17, 1992
	b	b	b
120	bOn-Line Testability	b MEDIUM	bMemorandum from
	bof Protection Systems	b	bE. S. Beckjord for
	b	b	bW. Minners, Novem-
	b	b	bber 23, 1990
	b	b	b
123	bDeficiencies in the Regu-	b DROP	bMemorandum from
	bplations Governing DBA	b(The safety concerns	bE. S. Beckjord
	band Failure Criterion	bof this Issue have	bfor W. Minners,



	<p> bCooling b </p> <p> b b </p> <p> b b </p>		<p> bW. Minners, March </p> <p> b29, 1991 </p> <p> b </p>
150	<p> bOverpressurization of b </p> <p> bContainment Penetrations b </p> <p> b b </p> <p> b b </p> <p> b b </p>	<p> DROP </p>	<p> bMemorandum from </p> <p> bE. S. Beckjord for </p> <p> bW. Minners, August </p> <p> b23, 1991 </p> <p> b </p>
151	<p> bReliability of Anticipa- b </p> <p> bted Transient Without b </p> <p> bScram Recirculation Pump b </p> <p> bTrip in BWRs b </p> <p> b b </p>	<p> MEDIUM </p>	<p> bMemorandum from </p> <p> bE. S. Beckjord for </p> <p> bW. Minners, August </p> <p> b27, 1991 </p> <p> b </p>
153	<p> bLoss of Essential Service b </p> <p> bWater in LWRs b </p> <p> b b </p> <p> b b </p> <p> b b </p>	<p> HIGH </p>	<p> bMemorandum from </p> <p> bE. S. Beckjord </p> <p> bfor W. Minners, </p> <p> bMarch 29, 1991 </p> <p> b </p>
154	<p> bAdequacy of Emergency b </p> <p> band Essential Lighting b </p> <p> b b </p> <p> b b </p> <p> b b </p>	<p> LOW </p>	<p> bMemorandum from </p> <p> bE. S. Beckjord </p> <p> bfor W. Minners, </p> <p> bJanuary 24, 1992 </p> <p> b </p>
156.1.2	<p> bDam Integrity and Site b </p> <p> bFlooding b </p> <p> b b </p> <p> b b </p> <p> b b </p>	<p> DROP </p> <p> b(The safety concerns </p> <p> b of this Issue will </p> <p> b be addressed in the </p> <p> b implementation of the </p>	<p> bMemorandum from </p> <p> bE. S. Beckjord </p> <p> bfor W. Minners, </p> <p> bJanuary 27, 1992 </p>

	b	bIPEEE and Dam Safety b
	b	bPrograms) b
	b	b b
156.1.3	bSite Hydrology and	b DROP bMemorandum from
	bAbility to Withstand	b(The safety concerns bE. S. Beckjord
	bFloods	b of this Issue will bfor W. Minners,
	b	b be addressed in the bJanuary 27, 1992
	b	bimplementation of the b
	b	bIPE, IPEEE, and Dam b
	b	bSafety Programs) b

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	p	pIssue A-37, "Turbine p	
	p	pMissiles")	p
	p	p	p
156.2.1	pSevere Weather Effects	p DROP	pMemorandum from
	p on Structures	p(The safety concerns pE. S. Beckjord	
	p	pof this Issue will pfor W. Minners,	
	p	pbe addressed in the pJanuary 29, 1992	
	p	pimplementation of thep	
	p	pIEEE Program)	p
	p	p	p
156.3.4	pIsolation of High and	p DROP	pMemorandum from
	pLow Pressure Systems	p(The safety concerns pE. S. Beckjord for	
	p	pof this Issue are pW. Minners,	
	p	pbeing addressed in pDecember 11, 1991	
	p	pthe resolution of p	
	p	pGeneric Issue 105, p	
	p	p"Interfacing Systems p	
	p	pLOCA in LWRs")	p
	p	p	p
156.3.5	pAutomatic Emergency Core	p DROP	pMemorandum from
	pCooling System Switchoverp	p(The safety concerns pE. S. Beckjord for	
	p	pof this Issue will bepW. Minners,	
	p	paddressed in the pNovember 7, 1991	
	p	presolution of Genericp	
	p	pIssue 24, "Automatic p	
	p	pEmergency Core Cool- p	
	p	pbing System Switchoverp	
	p	p to Recirculation")	p



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TABLE A (Cont'd)

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Generic	b	b	Priority Ranking	b	
Issue	b	b	Proposed by	b	Reference
Number	b	b	the NRC Staff	b	Document

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	b	b	b
156.4.1	bReactor Protection	b DROP	bMemorandum from
	bSystem and Engineered	b(The safety concerns	bE. S. Beckjord for
	bSafety Features Systems	b of this Issue will	bW. Minners,
	bIsolation	b be addressed in the	bNovember 6, 1991
	b	bresolution of Generic	b
	b	bIssue 142, "Leakage	b
	b	bThrough Electrical	b
	b	bIsolators in Instru-	b
	b	bmentation Circuits"	b
	b	b	b
A-19	bDigital Computer Protec-	bLicensing Issue	bMemorandum from
	b tion System	b(Staff efforts are	bE. S. Beckjord for
	b	b under way in pursuit	bB. Sheron,
	b	b of this Issue)	bNovember 15, 1990
	b	b	b
B-22	bLWR Fuel	b DROP	bMemorandum from
	b	b	bE. S. Beckjord for

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ATTACHMENT 1

LIST OF GENERIC ISSUES FOR WHICH  
THE ACRS AGREES WITH THE  
PRIORITY RANKINGS PROPOSED BY THE NRC STAFF

Generic Issue No.	Title
24	Automatic Emergency Core Cooling System Switchover to Recirculation
38	Potential Recirculation System Failure as a Consequence of Ingestion of Containment Paint Flakes or Other Fine Debris
72	Control Rod Drive Guide Tube Support Pin Failures
73	Detached Thermal Sleeves
100	Once-Through Steam Generator Level
116	Accident Management
118	Tendon Anchor Head Failure
143	Availability of Chilled Water Systems and Room Cooling
150	Overpressurization of Containment Penetrations
154	Adequacy of Emergency and Essential Lighting
156.1.2	Dam Integrity and Site Flooding
156.1.3	Site Hydrology and Ability to Withstand Floods
156.1.5	Tornado Missiles
156.2.1	Severe Weather Effects on Structures
156.3.4	Isolation of High and Low Pressure Systems
156.3.5	Automatic Emergency Core Cooling System Switchover
156.4.1	Reactor Protection System and Engineered Safety Features Systems Isolation
B-22	LWR Fuel
B-32	Ice Effects on Safety-Related Water Supplies

ATTACHMENT 2

LIST OF GENERIC ISSUES FOR WHICH THE ACRS AGREES  
WITH THE PROPOSED PRIORITY RANKINGS  
BUT WITH COMMENTS

Generic Issue No.:	120
Title:	On-Line Testability of Protection Systems
Proposed Priority Ranking:	MEDIUM
ACRS Comment:	We are concerned about the logic used to reach the value of the estimated decrease in risk produced by an estimated increase in the frequency of testing. Experience indicates that a significant number of unplanned trips are produced by the testing of safety systems at power. This must produce an increased risk, but no account is taken of this increase in the analysis. We recommend that the analysis be extended to include the estimated effects of errors in testing while at power.
Generic Issue No.:	142
Title:	Leakage Through Electrical Isolators in Instrumentation Circuits
Proposed Priority Ranking:	MEDIUM
ACRS Comment:	We note that the analysis of this issue is a good example of a situation in which so many unsupported assumptions were necessary to reach a conclusion that the final numerical result has little credibility. Further, we observe that no attention is given to the possibility of eliminating voltage or current surges, many of which probably result from inadequate plant grounding systems.

Generic  
Issue No.: 151

Title: Reliability of Anticipated Transient Without  
Scram Recirculation Pump Trip in BWRs

Proposed  
Priority Ranking: MEDIUM

ACRS Comment: We are puzzled that no consideration appears  
to have been given to replacing the faulty  
circuit breakers with breakers having higher  
reliability.

Generic  
Issue No.: 153

Title: Loss of Essential Service Water in LWRs

Proposed  
Priority Ranking: HIGH

ACRS Comment: In our August 13, 1991 letter to Mr. James M.  
Taylor, EDO, regarding "Proposed Resolution of  
Generic Issue 130, 'Essential Service Water  
System Failures at Multi-Unit Sites' and Task  
Action Plan for Generic Issue 153, 'Loss of  
Essential Service Water in LWRs,'" we provided  
the following comments:

"... we note that RES has recently developed a  
Task Action Plan (TAP) for Generic Issue 153,  
'Loss of Essential Service Water in LWRs.'  
This work represents an expansion of GI-130 to  
the remaining 99 operating LWRs. The TAP  
states that the IPEs for the population of  
operating plants '... may provide information  
related to the ESW system' and '... may also  
result in an ESW risk model for each plant,  
which may be useful for this task.' We fail  
to see how a meaningful IPE can be performed  
without a detailed evaluation of a plant's  
ESWS and the accident sequences that could  
result from partial or complete loss of ESWS."

"We believe that GI-153 is well enough defined  
that it could be resolved on a plant-specific  
basis as part of the IPE process, and we  
recommend that this approach be followed. We  
believe also that there may be other generic  
issues at a similar stage of development and  
suggest that work on their resolution could be  
deferred until enough IPEs have been received  
and evaluated to determine if the expenditure  
of staff resources to deal with them as gener-  
ic issues is warranted."

We continue to have this position on this generic issue.

Generic  
Issue No.: B-29

Title: Effectiveness of Ultimate Heat Sinks

Proposed  
Priority Ranking: Licensing Issue (Resolved)

ACRS Comment: This issue centers on concerns associated with the validity of the mathematical models used by the NRC staff to predict the performance of the ultimate heat sink (UHS) used to cool the core following a design-basis accident. The resolution approach selected by the staff, as well as the methodology supporting the confirmation of the NRC models, appears appropriate. However, no mention is made of the use of natural draft cooling towers for UHS duty. We request that the staff determine if natural draft towers are used for such duty at any nuclear plants and, if so, whether the staff's models include their use.

#### ATTACHMENT 3

#### GENERIC ISSUES FOR WHICH THE ACRS DISAGREES WITH THE PROPOSED PRIORITY RANKING

Generic  
Issue No.: 123

Title: Deficiencies in the Regulations Governing DBA and Failure Criterion Suggested by the Davis-Besse Incident of June 9, 1985

Proposed  
Priority Ranking: DROP (The safety concerns of this issue have been or will be addressed in the resolution of USIs A-17, A-44, A-45, and A-47, the evaluation of Generic Issue 117, the IPE Program, and the Maintenance Rule)

ACRS  
Recommendation: HIGH

Reasons: The conclusion of the staff to drop Generic Issue 123 as a new and separate issue is based on the position that all the safety concerns of this issue have been adequately addressed by the resolution of USIs A-17, A-44, A-45,

and A-47, all of which have been considered resolved.

During our review of the proposed resolution of USIs A-17 and A-47, we were told that several issues that were not addressed in the proposed resolution would be evaluated under the Multiple System Responses Program (MSRP). The MSRP, that was completed in October 1989, identified several items for further consideration. These items are being evaluated by the staff to determine whether they should be pursued as generic issues. The MSRP items do not appear to have been factored into the priority evaluation of Generic Issue 123. Consideration of the MSRP items may impact on the staff's conclusion to drop this issue. Therefore, we believe that the staff should consider the MSRP items in the priority evaluation of Generic Issue 123. Until this is done, we recommend that this issue be assigned a HIGH priority.

Generic  
Issue No.: 156.1.6

Title: Turbine Missiles

Proposed  
Priority Ranking: DROP (The safety concerns of this issue were addressed in the evaluation of Generic Issue A-37, "Turbine Missiles")

ACRS  
Recommendation: HIGH

Reasons: In our July 18, 1991 letter to Mr. James M. Taylor, EDO, regarding "Concerns Related to the General Electric Advanced Boiling Water Reactor Design," we recommended that the staff consider the development of a set of preoperational and periodic operational inspection, evaluation, and acceptance requirements for new and replacement low pressure (LP) turbine rotors that utilize the new integral forging technology. We were particularly concerned about the use of unbored integral rotors. We have not yet received a response from the EDO to this recommendation.

A related concern is the need for this same kind of requirement for new and replacement Brown-Boveri LP turbine rotors that are manufactured by welding forged disks together.

We note that catastrophic failure of a turbine rotor can occur at normal operating speed if undetected flaws grow to critical size. Thus, avoidance of overspeed does not resolve this issue.

In addition, the lessons learned from the November 9, 1991 turbine-generator overspeed event that occurred at the Salem Nuclear Plant, Unit 2, need to be evaluated with respect to the assumptions that have been made historically in the turbine missile risk analysis.

We believe that each of these issues need to be addressed before this generic issue can be resolved.