Northeast Utilities
Millstone - Unit 3

Independent Corrective Action Verification Program
(ICAVP)

System Review Checklist

CK-MP3-02 - 06, Rev. 1

Topical Area Review Checklist

Prepared by:	D A SCHROEDER		6-23-97
	Name	Signature	Date
Approved by:	A.A. NEIRI		6-23-97
	Name	Signature	Date

IMPLEMENTATION

System	
Lead Verifier	
SRG Lead	

Topical Area Review Checklist

INSTRUCTIONS

This checklist supplements p.oject instruction PI-MP3-02 and shall be used for performing the review of topical areas for the selected systems. Application and use of this checklist shall be as follows:

1. The checklists consists of five parts; A-Pipe Whip/Jet impingement, B-Missiles, C-Internal Fooding, D-Station Blackout and E-Appendix R Safe Shutdown Analysis.
2. The Lead Verifier shall assign verifier(s) to review each of the 5 topics addressed in the checklist.
3. The assigned verifier shall complete the applicable part, sign and date the applicable part and return it to the Lead Verifier.
4. The Lead Verifier shall review each part for proper implementation and for completeness. The Lead Verifier shall assemble the completed checklist, number the pages sequentially, identify the system in the applicable blocks and shall sign and date the cover sheet.
5. The SRG Lead shall indicate his concurrence the checklist has been completed by signing and dating the cover sheet.

Topical Area Review Checklist

A-Pipe Whip/Jet Impingement

	Yes	No	Comment
1. Is the system under review a high energy piping system as defined in section 3.6.1.1.2 of the USAR. If no, the review is complete. If yes, complete the remainder of section A of the checklist.	____	____	_____
2. Have the effects of pipe whip and jet impingement been evaluated in the 3.6-X series tables of the USAR. If no, initiate DR. If yes, list tables in the comment section.	____	____	_____
3. Are the breaks identified in the USAR 3.6 series tables consistent with the piping analysis. Identify calculations reviewed in comment section.	____	____	_____
4. Where pipe rupture restraints were used to prevent the pipe from whipping, have the whip restraints been designed adequately. Justify response in comment section. Identify applicable break numbers, pipe rupture restraints, and calculations reviewed. Calculations to be reviewed include analysis which determines pipe rupture loads and analysis qualifying the pipe rupture restraint.	____	____	_____
5. Where the pipe is allowed to whip, walkdowns and/or drawing reviews have verified all targets are addressed in the USAR tables and supporting calculations. Provide justification for response in comment section.	____	____	_____
6. Where the pipe is allowed to whip, safety related targets have either been demonstrated by analysis to be capable of withstanding impact or are protected by energy absorbing pipe rupture restraints. Provide basis for yes response in comment section. Basis should identify analysis reviewed (including qualification of target or qualification of restraint).	____	____	_____

Topical Area Review Checklist

A-Pipe Whip/Jet Impingement

	Yes	No	Comment
7. For each postulated break, walkdown and/or drawing reviews have verified that all safety related jet impingement targets have been addressed in USAR Tables and supporting analysis. Provide justification for response in comment section.	____	____	_____
8. For each postulated break, the distance from the break to the safety related jet impingement targets contained in the USAR and supporting analysis has either been field verified or verified by drawing review. Provide basis for response in comment section.	____	____	_____
9. Jet intensity and jet load calculations for each target have been reviewed and are correct. Justify response in comment section.	____	____	_____
10. Safety related jet impingement targets have been demonstrated to be capable of withstanding the jet impingement forces or has been adequately shielded. Justify response in comment section.	____	____	_____

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Pipe Whip/Jet Impingement Comment Sheet

Comment No.	Comment

Topical Area Review Checklist

B-Missiles

	Yes	No	Comment
1. Is system under review considered a high energy piping system as defined in section 3.6.1.1.2 of the USAR. If yes, respond to questions a thru c. If not proceed to question 2.	____	____	_____
a. Have all potential pressurized missile sources been evaluated in the internally generated missile evaluation. Justify response in comment sheet.	____	____	_____
b. For missiles determined to be not credible, was adequate justification provided for concluding generation of missile is not credible. Justify response in comment sheet.	____	____	_____
c. For missiles determined to be credible, were the effects of the missile evaluated and if required, were protection features adequate. Justify response in comment section.	____	____	_____
2. Does the system under review contain high speed rotating machinery. If yes, answer questions a, b and c below:	____	____	_____
a. Were all potential missiles from rotating equipment addressed in the missile analysis. Justify response in comment sheet.	____	____	_____
b. Where the evaluation concluded that missile generation was not credible, was this conclusion substantiated. Justify response in comment sheet.	____	____	_____
c. For credible missiles, were the effects of missiles properly evaluated, and if required, were the protection features adequate. Justify response in comment section.	____	____	_____

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Topical Area Review Checklist

B-Missiles Comment Sheet

Comment No.	Comment

Topical Area Review Checklist

C-Internal Flooding

For each environmental zone containing piping for the system under review, verify that the internal flooding evaluation has considered the effects of failure of such piping on the areas flood level. Describe below, the calculations reviewed (applicable flooding analysis) and whether the selected systems piping was properly addressed. (Use the continuation page as needed).

The effects of postulated pipe failures in the selected systems have been properly assessed in the flooding analysis.

____ ____ ____
Yes No NA

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Topical Area Review Checklist

C-Internal Flooding (Continuation Page)

Topical Area Review Checklist

D-Station Blackout

If components for the selected system are credited for coping with a station blackout, described below which equipment is applicable and the functional requirements assumed for the equipment in the station blackout report (SP-EE-363). Also describe whether the applicable equipment is capable of performing these functions and the basis for this assessment. (Use continuation page as needed).

Equipment of the selected system required for coping with a station blackout can perform the required functions.

____ Yes ____ No ____ NA

_____ _____
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Topical Area Review Checklist

D-Station Blackout (Continuation Page)

Topical Area Review Checklist

E. Appendix R Safe Shutdown Analysis

		Yes	No
1.	Is the system under review credited as a safe shutdown system in section 6.2 of the FPER or as a support system in section 7.0 of the FPER. If no, no further review is required. If yes, complete the remaining questions.	____	____
2.	From table 6.1 of the FPER, identify the fire areas for which the system under review is credited as available to support safe shutdown. List fire areas in the space below.	____	____
3.	For the fire areas identified in response to question 2 verify that no components of the system including cables supporting system function are located in the fire area or, if they are, that adequate justification for safe shutdown is provided. Justify the response below. Identify calculations, drawings, reports and lists that were reviewed to arrive at the conclusion.	____	____
4.	For one fire zone containing cables for the system under review, verify associated circuits in common enclosures conform with FPER Section 6.3.1.3 which states that "safety-related and non-safety related circuits are routed in their own separate raceways and properly applied protective devices are included in all Millstone 3 power and control circuits; "thus this failure mode would not surface." Justify the response and document the evaluation below.	____	____

Topical Area Review Checklist

E-Appendix R Safe Shutdown Analysis (Continuation Page)

The selected system components credited for Appendix R safe shutdown have been verified to be capable of performing the required funcitons.

____ ____ ____
Yes No NA

_____ _____
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