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Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Millard L. Wohl
Technical Specification Branch

Subject: Clarification of Technical Specification Changes Given in
ECCS Actuation Instrumentation Analysis

Reference: NEDC-30936P-A, "BWR Owners' Group Technical Specification
Improvement Methodology (With Demonstration for BWR ECCS
Actuation Instrumentation), Part 2, December 1986.

The purpose of this letter is to provide you with information that we have forwarded to each BWR Owner to support his plant specific submittal of changes to the ECCS actuation instrumentation surveillance test intervals (STIs) and allowed out-of-service times (AOTs) given in the Reference. The information deals with clarifications to modified technical specifications given in Appendix A of the Reference.

The first clarification concerned the proposed change to the repair AOTs given on pages A-3 and A-9 for BWR 6 Solid-State Plants, pages A-4 and A-14 for BWR 5/6 Relay Plants, and pages A-4 and A-18 for BWR 3/4 Plants. In the technical specification markup for the above product lines, Table 3.3.3-1 was not included in Appendix A of the Reference report. The proposed modification as written implies a 24 hour AOT before taking any action listed in Table 3.3.3-1. It was intended that the AOT of 24 hours apply to the individual actions listed in Table 3.3.3-1. Therefore, we have advised each utility to make the following changes relating to repair AOT in their plant specific submittals:

- a) No change to Action b. of paragraph 3/4.3.3. The paragraph should read as follows:

"With one or more ECCS actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.3-1."

- b) Revise ACTIONS given in Table 3.3.3-1 according to the attached Table 3.3.3-1 modifications (Enclosure 1) for Standard Technical Specifications.

The second clarification dealt with technical specification changes to the reactor core isolation cooling (RCIC) system. The Reference analysis

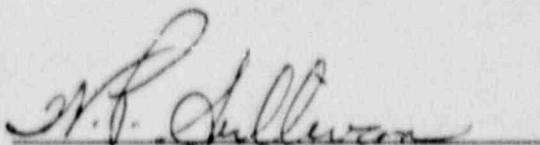
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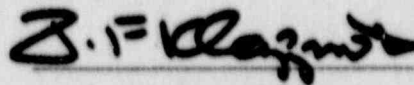
included proposed STI and AOT changes to this system (see last paragraph of page 2-1). However, markups of the proposed modifications as they should appear in the Standard Technical Specifications for the RCIC actuation were not provided in Appendix A of the Reference report. The attached markups (Enclosure 2) of the Standard Technical Specifications for the RCIC actuation instrumentation were provided to the BWR Owners for their use in their plant specific submittals.

We feel the above information has been considered in the Reference NRC approved analysis and represent clarifications to ensure plant specific changes are properly interpreted. Please give one of us a call if you should have any questions.

Very truly yours,



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Enclosures

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Enclosure 1

Proposed Repair Allowed Out-of-Service Time
Modifications to the ECCS Actuation Instrumentation
Standard Technical Specifications

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION

- ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:
- a. With one channel inoperable, place the inoperable channel in the tripped condition within ~~one hour~~^{24 hours} or declare the associated system inoperable.
 - b. With more than one channel inoperable, declare the associated system inoperable.
- ACTION 31 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, declare the associated ECCS inoperable ^{within 24 hours}
- ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within ~~one hour~~^{24 hours}.
- ACTION 33 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within ~~one hour~~^{24 hours}; restore the inoperable channel to OPERABLE status within 7 days or declare the associated system inoperable.
- ACTION 34 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within ~~one hour~~^{24 hours} or declare the associated ECCS inoperable.
- ACTION 35 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:
- a. For one trip system, place that trip system in the tripped condition within ~~one hour~~^{24 hours} or declare the HPCI system inoperable.
 - b. For both trip systems, declare the HPCI system inoperable.
- ACTION 36 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place at least one inoperable channel in the tripped condition within ~~one hour~~^{24 hours} or declare the HPCI system inoperable.
- ACTION 37 - With the number of OPERABLE channels less than the Total Number of Channels, declare the associated emergency diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2, as appropriate.
- ACTION 38 - With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel in the tripped condition within 1 hour; operation may then continue until performance of the next required CHANNEL FUNCTIONAL TEST.

*The provisions of Specification 3.0.4 are not applicable.

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION

- ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip (System) (Function) requirement: (For "per Trip System")
- For one trip system, place at least one inoperable channel in the tripped condition within ~~one hour~~ ^{24 hours} or declare the associated ADS trip system or ECCS inoperable.
 - For both trip systems, declare the associated ADS trip system or ECCS inoperable.
- (For "per Trip Function")
- For the LPCS system and the LPCI mode of the RHR system, declare the associated LPCS and/or LPCI systems inoperable.
 - For the HPCS system and the ADS:
 - With one channel inoperable, place the inoperable channel in the tripped condition within ~~one hour~~ ^{24 hours} or declare the HPCS system and associated ADS trip system inoperable.
 - With more than one channel inoperable, declare the HPCS system and the associated ADS trip system(s) inoperable.
- ACTION 31 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, ~~within 24 hours~~ declare the associated ADS trip system or ECCS inoperable.
- ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, verify bus power availability at least once per 12 hours or declare the associated ECCS inoperable.
- ACTION 33 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within ~~24 hours~~ ^{24 hours} or declare the associated ADS valve or ECCS inoperable.
- ACTION 34 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place at least one inoperable channel in the tripped condition within ~~one hour~~ ^{24 hours} or declare the HPCS system inoperable.

*The provisions of Specification 3.0.4 are not applicable.

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION (Continued)

- ACTION 35 - With the number of OPERABLE channels less than the Total Number of Channels, declare the associated emergency diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2, as appropriate.
- ACTION 36 - With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel in the tripped condition within 1 hour^a; operation may then continue until performance of the next required CHANNEL FUNCTIONAL TEST.

^aThe provisions of Specification 3.0.4 are not applicable.

TABLE 3.3.3-1 (Continued)
EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION

- ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:
- With one channel inoperable, place the inoperable channel in the tripped condition within ~~one hour~~^{24 hours} or declare the associated system inoperable.
 - With more than one channel inoperable, declare the associated system inoperable.
- ACTION 31 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within ~~one hour~~^{24 hours}. Restore the inoperable channel to OPERABLE status within 7 days or declare the associated system inoperable.
- ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, ~~within 24 hours~~ declare the associated ADS trip system or ECCS inoperable.
- ACTION 33 - With the number of OPERABLE channels less than the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within ~~one hour~~^{24 hours}.
- ACTION 34 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, verify bus power availability at least once per 12 hours or declare the associated ECCS inoperable. X
- ACTION 35 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within ~~8 hours~~^{24 hours} or declare the associated ADS valve or ECCS inoperable.
- ACTION 36 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:
- For one trip system, place that trip system in the tripped condition within ~~one hour~~^{24 hours} or declare the HPCS system inoperable.
 - For both trip systems, declare the HPCS system inoperable.
- ACTION 37 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place at least one inoperable channel in the tripped condition within ~~one hour~~^{24 hours} or declare the HPCS system inoperable.
- ACTION 38 - With the number of OPERABLE channels less than the Total Number of Channels, declare the associated emergency diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2, as appropriate.
- ACTION 39 - With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel in the tripped condition within 1 hour^{24 hours}; operation may then continue until performance of the next required CHANNEL FUNCTIONAL TEST.

*The provisions of Specification 3.0.4 are not applicable.

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION

- ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:
- With one channel inoperable, place the inoperable channel in the tripped condition within ~~3 hours~~ ^{24 hours} or declare the associated system inoperable.
 - With more than one channel inoperable, declare the associated system inoperable.
- ACTION 31 - Deleted.
- ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, ^{within 24 hours} declare the associated ADS trip system or ECCS inoperable.
- ACTION 33 - With the number of OPERABLE channels less than the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel(s) in the tripped condition within ~~3 hours~~ ^{24 hours}.
- ACTION 34 - Deleted.
- ACTION 35 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within ~~3 hours~~ ^{24 hours} or declare the associated ADS valve or ECCS inoperable.
- ACTION 36 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:
- For one trip system, place that trip system in the tripped condition within ~~one hour~~ ^{24 hours} or declare the NPCS system inoperable.
 - For both trip systems, declare the NPCS system inoperable.
- ACTION 37 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place at least one inoperable channel in the tripped condition within ~~3 hours~~ ^{24 hours} or declare the NPCS system inoperable.
- ACTION 38 - With the number of OPERABLE channels less than the Total Number of Channels, declare the associated emergency diesel generator inoperable and take the ACTION required by Specifications 3.8.1.1 or 3.8.1.2, as appropriate.
- ACTION 39 - With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel in the tripped condition within 1 hour^a; operation may then continue until performance of the next required CHANNEL FUNCTIONAL TEST.
- ACTION 40 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within ~~one hour~~ ^{24 hours}. Restore the inoperable channel to OPERABLE status within 7 days or declare the associated system inoperable.

^aThe provisions of Specification 3.0.4 are not applicable.

Enclosure 2

Proposed Modifications to the
RCIC Actuation Instrumentation
BWR Standard Technical Specifications

BWR 4

RCIC Actuation Instrumentation

Technical Specification

INSTRUMENTATION

3/4 3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.5 The reactor core isolation cooling (RCIC) system actuation instrumentation channels shown in Table 3.3.5-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.5-2.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3 with reactor steam dome pressure greater than (100) psig.

ACTION:

- a. With a RCIC system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.5-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.
- b. With one or more RCIC system actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.5-1.

SURVEILLANCE REQUIREMENTS

4.3.5.1 Each RCIC system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.5.1-1.

4.3.5.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

TABLE 3.3.5-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

FUNCTIONAL UNITS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM ^(a)	ACTION
a. Reactor Vessel Water Level - (Low Low, Level 2)	2	S0
b. Reactor Vessel Water Level - High, Level (8)	2 ^(b)	S1
c. Condensate Storage Tank Water Level - Low	(2) ^(c)	S2
d. Suppression Pool Water Level - High	(2) ^(c)	S2
e. Manual Initiation	(1)/(system) ^(d)	(S3)

(a) A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.

(b) One trip system with two-out-of-two logic.

(c) One trip system with one-out-of-two logic.

(d) One trip system with one channel.

TABLE 3.3.5-1 (Continued)

REACTOR CORE ISOLATION COOLING SYSTEM

ACTUATION INSTRUMENTATION

- ACTION 50 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:
- a. For one trip system, place the inoperable channel(s) and/or that trip system in the tripped condition within ~~one hour~~ *24 hours* or declare the RCIC system inoperable.
 - b. For both trip systems, declare the RCIC system inoperable.
- ACTION 51 - With the number of OPERABLE channels less than required by the minimum OPERABLE channels per Trip System requirement, declare the RCIC system inoperable *within 24 hours*.
- ACTION 52 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place at least one inoperable channel in the tripped condition within ~~one hour~~ *24 hours* or declare the RCIC system inoperable.
- ACTION 53 - With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within ~~(0) hours~~ *24 hours* or declare the RCIC system inoperable.

TABLE 3.3.5-2

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

FUNCTIONAL UNITS	TRIP SETPOINT	ALLOWABLE VALUE
a. Reactor Vessel Water Level - (Low Low, Level 2)	$\geq - (38) \text{ inches}^a$	$\geq - () \text{ inches}$
b. Reactor Vessel Water Level - High, Level (8)	$\leq (54) \text{ inches}^a$	$\leq (55.5) \text{ inches}$
c. Condensate Storage Tank Level - Low	$\geq () \text{ inches}$	$\geq () \text{ inches}$
d. Suppression Pool Water Level - High	$\leq () \text{ inches}$	$\leq () \text{ inches}$
e. Manual Initiation	NA	NA

^aSee Bases Figure B 3/4 3-1.

TABLE 4.3.5.1-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNITS</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>
a. Reactor Vessel Water Level - (Low Low, Level 2)	S	M → Q	R
b. Reactor Vessel Water Level - High, Level (8)	S	M → Q	R
c. Condensate Storage Tank Level - Low	(S)	M → Q	(R)
d. Suppression Pool Water Level - High	(S)	M → Q	(R)
e. Manual Initiation	NA	(M ^(a)) (R)	NA

((a) Manual initiation switches shall be tested at least once per 18 months during shutdown. All other circuitry associated with manual initiation shall receive a CHANNEL FUNCTIONAL TEST at least once per 37 days as part of circuitry required to be tested for automatic system actuation.)

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RCIC Actuation Instrumentation

Technical Specification

INSTRUMENTATION

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.5 The reactor core isolation cooling (RCIC) system actuation instrumentation channels shown in Table 3.3.5-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.5-2.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3 with reactor steam dome pressure greater than (100) psig.

ACTION:

- a. With a RCIC system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.5-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.
- b. With one or more RCIC system actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.5-1.

SURVEILLANCE REQUIREMENTS

4.3.5.1 Each RCIC system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.5.1-1.

4.3.5.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

TABLE 3.3.5-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

<u>FUNCTIONAL UNITS</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM^(a)</u>	<u>ACTION</u>	
a. Reactor Vessel Water Level - (Low Low, Level 2)	2	50	
b. Reactor Vessel Water Level - High	2 ^(b)	51	
c. Condensate Storage Tank Water Level - Low	(2) ^(c)	52	
d. Suppression Pool Water Level - High	(1) ^(d)	52	
e. Manual Initiation	(1)/(system) ^(d)	53	

(a) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.

(b) One trip system with two-out-of-two logic.

(c) One trip system with one-out-of-two logic.

(d) Single channel.

TABLE 3.3.5-1 (Continued)

REACTOR CORE ISOLATION COOLING SYSTEM

ACTUATION INSTRUMENTATION

- ACTION 50 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:
- a. For one trip system, place the inoperable channel in the tripped condition within ~~one hour~~ or declare the RCIC system inoperable. *24 hours*
 - b. For both trip systems, declare the RCIC system inoperable.
- ACTION 51 - With the number of OPERABLE channels less than required by the minimum OPERABLE channels per Trip System requirement, declare the RCIC system inoperable. *within 24 hours*
- ACTION 52 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place at least one inoperable channel in the tripped condition within ~~one hour~~ or declare the RCIC system inoperable. *24 hours*
- ACTION 53 - With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within ~~(8) hours~~ or declare the RCIC system inoperable. *24 hours*

TABLE 3.3.5-2

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

FUNCTIONAL UNITS	TRIP SETPOINT	ALLOWABLE VALUE
a. Reactor Vessel Water Level - (Low Low, Level 2)	$\geq - (38) \text{ inches}^a$	$\geq - () \text{ inches}^a$
b. Reactor Vessel Water Level - High	$\leq () \text{ inches}^a$	$\leq () \text{ inches}^a$
c. Condensate Storage Tank Level - Low	$\geq () \text{ inches}$	$\geq () \text{ inches}$
d. Suppression Pool Water Level - High	$\leq () \text{ inches}$	$\leq () \text{ inches}$
e. Manual Initiation	NA	NA

^aSee Bases Figure B 3/4 3-1.

TABLE 4.3.5.1-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNITS</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>
a. Reactor Vessel Water Level - (Low Low, Level 2)	S	M → Q	R
b. Reactor Vessel Water Level - High	S	M → Q	R
c. Condensate Storage Tank Level - Low	(S)	M → Q	(R)
d. Suppression Pool Water Level - High	(S)	M → Q	(R)
e. Manual Initiation	NA	M ^(a) → Q	NA

(a) Manual initiation switches shall be tested at least once per 18 months during shutdown. All other circuitry associated with manual initiation shall receive a CHANNEL FUNCTIONAL TEST at least once per 31 days as part of circuitry required to be tested for automatic system actuation.

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RCIC Actuation Instrumentation

Technical Specification

INSTRUMENTATION

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.5 The reactor core isolation cooling (RCIC) system actuation instrumentation channels shown in Table 3.3.5-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.5-2.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3 with reactor steam dome pressure greater than (100) psig.

ACTION:

- a. With a RCIC system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.5-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.
- b. With one or more RCIC system actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.5-1.

SURVEILLANCE REQUIREMENTS

4.3.5.1 Each RCIC system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.5.1-1.

4.3.5.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

TABLE 3.3.5-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

FUNCTIONAL UNITS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM ^(a)	ACTION
a. Reactor Vessel Water Level - <u>Low Low, Level 2</u>	2	S0
b. Reactor Vessel Water Level - High, Level <u>1</u>	2 ^(b)	S1
c. Condensate Storage Tank Water Level - Low	(2) ^(c)	S2
d. Suppression Pool Water Level - High	(2) ^(c)	S2
e. Manual Initiation	(1)/(system) ^(d)	{ S3

- (a) A channel may be placed in an inoperable status for up to ⁶ 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.
- (b) One trip system with two-out-of-two logic.
- (c) One trip system with one-out-of-two logic.
- (d) One trip system with one channel.

INSTRUMENTATION

TABLE 3.3.5-1 (continued)
REACTOR CORE ISOLATION COOLING SYSTEM
ACTUATION INSTRUMENTATION

- ACTION 50 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:
- a. ~~For one trip system~~ *With one channel inoperable,* place the inoperable channel ~~in the tripped condition within one hour~~ *and/or* or declare the RCIC system inoperable. *24 hours*
- b. ~~For both trip systems~~ *With more than one channel inoperable,* declare the RCIC system inoperable.
- ACTION 51 - With the number of OPERABLE channels less than required by the Minimum OPERABLE channels per Trip System requirement, declare the RCIC system inoperable *within 24 hours.* *1*
- ACTION 52 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place at least one inoperable channel in the tripped condition *within 24 hours* or declare the RCIC system inoperable.
- ACTION 53 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within ~~(8) hours~~ or declare the RCIC system inoperable. *24 hours*

TABLE 3.3.5-2
REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

<u>FUNCTIONAL UNITS</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
a. Reactor Vessel Water Level - Low Low, Level 2	> -(51) inches ^a	> -(53) inches
b. Reactor Vessel Water Level - High, Level 1	< (52) inches ^a	< (52.6) inches
c. Condensate Storage Tank Level - Low	> (14) inches	> (9) inches
d. Suppression Pool Water Level - High	< (5) inches	< (21) inches
e. Manual Initiation	NA	NA

X X

^aSee Bases Figure B 3/4 3-1.

TABLE 4.3.5.1-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNITS	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
a. Reactor Vessel Water Level - Low Low, Level 2 <i>2</i>	S	H → Q	R ^(a)
b. Reactor Vessel Water Level - High, Level <i>18</i>	S	H → Q	R
c. Condensate Storage Tank Level - Low	S	H → Q	R
d. Suppression Pool Water Level - High	S	H → Q	R
e. Manual Initiation	NA	H ^(b) → Q ^(b)	NA

(a) Calibrate trip unit at least once per *92* days.

(b) Manual Initiation switches shall be tested at least once per 18 months during shutdown. All other circuitry associated with manual initiation shall receive a CHANNEL FUNCTIONAL TEST at least once per *92* days as a part of circuitry required to be tested for automatic system actuation.

✓
X
X
X

BWR 6 (Clinton) Solid-State
RCIC Actuation Instrumentation
Technical Specification

INSTRUMENTATION

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.5 The reactor core isolation cooling (RCIC) system actuation instrumentation channels shown in Table 3.3.5-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.5-2.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3 with reactor steam dome pressure greater than 150 psig.

ACTION:

- a. With an RCIC system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.5-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.
- b. With one or more RCIC system actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.5-1.

SURVEILLANCE REQUIREMENTS

4.3.5.1 Each RCIC system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.5.1-1.

4.3.5.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. All RCIC actuation system logic shall be manually tested independent of the SELF TEST SYSTEM such that all trip functions are tested at least once every four fuel cycles.*

*Manual testing for the purpose of satisfying Specification 4.3.5.2 is not required until after shutdown during the first regularly scheduled refueling outage.

TABLE 3.3.5-1**REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION**

<u>FUNCTIONAL UNITS</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM</u>	<u>ACTION</u>
a. Reactor Vessel Water Level - Low Low, Level 2	2 ^{(b)(a)}	50
b. Reactor Vessel Water Level - High, Level 8	2 ^(c)	51
c. RCIC Storage Tank Water Level - Low	2 ^{(d)(a)}	52
d. Suppression Pool Water Level - High	2 ^{(d)(a)}	52
e. Manual Initiation	1 ^(e)	53

TABLE 3.3.5-1 (Continued)

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

TABLE NOTATIONS

- (a) A channel may be placed in an inoperable status for up to ⁶ hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.
- (b) Two trip systems with two channels per trip system.
- (c) One trip system with two-out-of-two logic.
- (d) One trip system with one-out-of-two logic.
- (e) One trip system with one channel.

ACTION

- ACTION 50 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:
- a. For 1 trip system, place the inoperable channel(s) and/or that trip system in the tripped condition within ~~one hour~~ ^{24 hours} or declare the RCIC system inoperable.
 - b. For both trip systems, declare the RCIC system inoperable.
- ACTION 51 - With the number of OPERABLE channels less than required by the Minimum OPERABLE channels per Trip System requirement, declare the RCIC system inoperable ^{within 24 hours}.
- ACTION 52 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place at least one inoperable channel in the tripped condition within ~~2 hour~~ ^{24 hours} or declare the RCIC system inoperable.
- ACTION 53 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within ~~6 hours~~ ^{24 hours} or declare the RCIC system inoperable.

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

<u>FUNCTIONAL UNITS</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
a. Reactor Vessel Water Level - Low Low, Level 2	$\geq -45.5 \text{ in.}^*$	$\geq -47.7 \text{ in.}$
b. Reactor Vessel Water Level - High, Level 8	$\leq 52.0 \text{ in.}^*$	$\leq 52.6 \text{ in.}$
c. RCIC Storage Tank Level - Low	$\geq 3\frac{1}{2} \text{ in.}^{**}$	$\geq 0 \text{ in.}^{**}$
d. Suppression Pool Water Level - High	$\leq 6\frac{1}{2} \text{ in.}^\dagger$	$\leq 12 \text{ in.}^\dagger$
e. Manual Initiation	NA	NA

* See Bases Figure B 3/4 3-1.

** Instrument zero is 739' 10-3/4" msl.

† Instrument zero is 731' 5" msl.

CLINTON - UNIT 1

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TABLE 4.3.5.1-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNITS</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>
a. Reactor Vessel Water Level - Low Low, Level 2	S	H → Q	R(a)
b. Reactor Vessel Water Level - High, Level 8	S	H → Q	R(a)
c. RCIC Storage Tank Level - Low	S	H → Q	R(a)
d. Suppression Pool Water Level - High	S	H → Q	R(a)
e. Manual Initiation	NA	R	NA

(a) Calibrate the analog trip module at least once per 31 days.

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Limerick Generating Station, Unit 1
Instrument Drift Data for RPS and ECCS
Including Common Instrumentation

There are 42 channels of trip instrumentation in the Reactor Protection System (RPS), and 96 channels in Emergency Core Cooling Systems (ECCS) which are currently tested monthly as required by Technical Specifications, Tables 4.3.1.1 and 4.3.3.1. Of these 138 channels, 112 channels utilize Rosemount trip units.

A review of surveillance data sheets was performed for 14 of the trip units to determine how much the trip setting changed over a period of three consecutive surveillance intervals from 11/89 to 2/90. The results are:

CHANNEL	NET CHANGE (3 MOS) Milliamperes(MA)
<u>ECCS</u>	
1) PIS-51-1N656A ADS/RHR LPCI PUMP DISCH	0.01 MA
2) PIS-52-1N655A ADS/CORE SPRAY PMP DISCH	0.00
3) LIS-55-1N661B HPCI/CST LEVEL LOW	0.01
4) LIS-55-1N662B HPCI/SUPP POOL LVL HIGH	0.00
5) LIS-42-1N695A ADS/REACTOR LOW LVL 3	0.00
6) LS-42-1N693B HPCI&RCIC/REACTOR HI LVL 8	0.01
7) PIS-51-1N655A ADS/RHR LPCI PMP DISCH HI	0.01
8) PIS-42-1N694A DRYWELL PRESSURE HI	0.01
9) PIS-42-1N690A REACTOR PRESSURE LOW	0.01
<u>RPS</u>	
10) PIS-42-1N650A DRYWELL PRESSURE HI	0.01
11) PIS-42-1N678A REACTOR PRESSURE HI	0.01
12) PS-42-1N679A REACTOR PRESSURE HI	0.01
13) LIS-42-1N680A REACTOR LOW LEVEL 3	0.01
14) LISH-42-1N601B SCRAM DISCH VOL LEVEL HI	0.01

The trip units in the affected channels are primarily Rosemount Model 510DU's. The allowable drift for this trip unit for a three month period, calculated using the methodology described in NEDC-31336, GENERAL ELECTRIC INSTRUMENT SETPOINT METHODOLOGY, is approximately ± 0.02 MA.

If all of the change in trip unit setting reported above is attributed to drift, the worst case actual drift is 50% of the allowable drift as determined from the GE setpoint methodology and used in the setpoint calculations.

Based on the above, drift experienced in the plant is less than the drift used in setpoint calculation, and the surveillance test interval can be increased to quarterly.