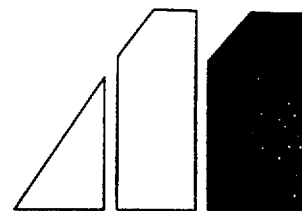


MILLSTONE NUCLEAR POWER STATION
SURVEILLANCE PROCEDURE

(83)



STOP

THINK

ACT

REVUEW

Spent Fuel Pool Boron Concentration

SP 3866

Rev. 3

Approval:

James M. [Signature]

PORC Mtg. No: Biennial Review

Date: 11/6/98

Effective Date:

11/8/96

Level of Use
General

SME: Don Werner

Millstone Unit 3
Surveillance Procedure

Spent Fuel Pool Boron Concentration

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ATTACHMENTS AND FORMS

Chem Form 3866-1, "Spent Fuel Pool Boron Concentration"

Level of Use
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1. PURPOSE

1.1 Objective

Provide instructions for verifying spent fuel pool boron concentration greater than or equal to ~~1650~~¹⁷⁵⁰ ppm. Completion of this procedure satisfies the requirements listed in Technical Specification 4.9.1.2. Chg #2

1.2 Discussion

Unit 3 Technical Specification 4.9.1.2. requires that boron concentration be verified greater than or equal to ~~800~~¹⁷⁵⁰ ppm ~~prior to moving fuel and every 72 hours during fuel movement.~~ ^{at least once per 72 hours}

~~Due to a concern over possible degradation of the boroflex plates in the spent fuel pool, an operability determination was completed. Operability Determination MP3-210-96 determined that the boron concentration should be maintained greater than or equal to 1650 ppm and should be verified at least once per 72 hours to ensure that a sufficient shutdown margin is maintained in the spent fuel pool. [Ref. 6.3]~~ Chg #2
Chg #1

Reactor Engineering has requested that if spent fuel pool boron concentration drops below ~~3200~~³⁶⁰⁰ ppm that they and Operations be notified that the ~~margin of safety has decreased.~~ ^{boron concentration has dropped below the minimum boron assumed in EOP 3505A, "Loss of Spent Fuel Pool Cooling."}

1.3 Applicability

At all times.

1.4 Frequency

At least once per 72 hours. ~~[Ref. 6.3]~~ Chg #1 Chg #2

2. PREREQUISITES

2.1 General

N/A

2.2 Documents

2.2.1 CP 3807F, "Operation of the Reactor Plant Sample Sink"

2.2.2 CP 3804AF, "Balance of Plant Sampling"

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2.3 Tools and Consumables

- Sample bottle

3. PRECAUTIONS

- 3.1 Samples may be radioactive. Proper Health Physics practices must be followed to prevent the spread of contamination.
- 3.2 The requirements of WC-1, "Work Control Process," for foreign material exclusion must be followed when obtaining a sample directly from the SFP to prevent foreign material from entering the SFP.

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4. INSTRUCTIONS

4.1 PERFORM the following and INITIAL Chem Form 3866-1:

- VERIFY "General Prerequisites" have been completed
- REVIEW Section 3, "Precautions"

4.2 Using 1 of the following methods, COLLECT spent fuel pool sample:

NOTE

The fuel pool demineralizer can be aligned to the spent fuel pool or the RWST. The demineralizer must be aligned to the SFP to obtain a SFP sample at the reactor plant sample sink.

- Refer To CP 3807F, "Operation of the Reactor Plant Sample Sink," and COLLECT SFP sample at fuel pool demineralizer influent sample point at reactor plant sample sink
- Refer To CP 3804AF, "Balance of Plant Sampling," and COLLECT SFP sample at fuel pool cooling pump suction

CAUTION

The requirements of WC-1, "Work Control Process," for foreign material exclusion must be followed when obtaining a sample directly from the SFP to prevent foreign material from entering the SFP.

- COLLECT dip sample at SFP

4.3 ANALYZE sample for boron.

4.4 ¹⁷⁵⁰ IF boron concentration is less than ~~1650~~ ppm, NOTIFY the following that this surveillance has failed and INITIAL "SM/US Notified of Failed Surveillance" line on Chem Form 3866-1: ~~[* Ref. 6.3]~~ Chg. #2

- SM/US
- Reactor Engineering
- Chemistry Supervision

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2600
4.5 IF boron concentration is less than 2200 ppm, NOTIFY the following that the margin to the acceptance criteria in the SEP has decreased:
boron concentration has dropped below the minimum boron assumed in EOP 3505A, "Loss of spent Fuel Pool Cooling."

- SM/US
- Reactor Engineering
- Chemistry Supervision

4.6 COMPLETE Chem Form 3866-1 as follows:

4.6.1 RECORD sample date and time.

4.6.2 RECORD boron concentration in ppm.

4.6.3 SIGN and DATE "Completed By" section.

4.7 NOTIFY Operations of spent fuel pool boron concentration.

4.8 SUBMIT Chem Form 3866-1 to Lab Supervisor.

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STOP

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5. REVIEW AND SIGNOFF

5.1 The review and signoff for this procedure is located in Chem Form 3866-1.

6. REFERENCES

6.1 Unit 3 Technical Specification 3/4.9.1.2.

6.2 Operability Determination MP3-210-96

6.3 LER 96-033-00, "Spent Fuel Pool Storage Potentially Outside of Design Basis During Seismic Events as a Result of Boroflex Embrittlement"

Chg
#1

7. SUMMARY OF CHANGES

7.1 Changed the following in response to Revision 1 of Operability Determination MP3-210-96:

- Minimum boron concentration from "800 ppm" to "1650 ppm"
- Applicability from "During all fuel movements within the spent fuel pool" to "At all times"
- Frequency from "Prior to any movement of fuel into or within the spent fuel pool and every 72 hours during fuel movement" to "At least once per 72 hours"

7.2 Added step to notify SM/US, Reactor Engineering, and Chemistry Supervision that the margin of safety has decreased when SFP boron drops below 2200 ppm.

7.3 Added option to collect SFP samples at SFP or at fuel pool cooling pump.

7.4 Changed "SS/SCO" to "SM/US."

7.5 Added sample bottle to tools and consumables.

Level of Use
General

STOP

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Spent Fuel Pool Boron Concentration

SURVEILLANCE COVER SHEET

ORM APPROVED

DATE

11-8-96

REFERENCE SPEC.

Tech Spec 3/4.9.1.2 (Note 1)

REFERENCE PROCEDURE

SP 3866

PORC MTG. NO.

3-96-253

SCHEDULE DATE

APPLICABLE MODE

At all times

FREQUENCY

At least once per 72 hours

TEST AUTHORIZED BY (SM/US)

N/A

DATE

N/A

ACCEPTANCE CRITERIA MET:

COMPLETED BY

DATE

ACCEPTED BY (DEPT. FLS)

DATE

APPROVED BY (DEPARTMENT HEAD/DESIGNEE)

DATE

☐ YES☐ NO☒ TECH SPEC
SURVEILLANCE☐ MAINTENANCE
RESTORATION☐ SYSTEM
ALIGNMENT☐ NON-TECH SPEC
SURVEILLANCE☐ ISI TESTING

TEST EQUIPMENT

QA NUMBER

CAL DUE DATE

N/A

N/A

N/A

ACCEPTANCE CRITERIA

Spent fuel pool boron concentration greater than or equal to ~~1650~~ ppm
1750

IF Spent Fuel Pool boron concentration is less than 2600 ppm, SM/US, Reactor Engineering, Chemistry Supervision notified that boron concentration has dropped below the minimum boron assumed in EOP 3505A, "Loss of Spent Fuel Pool Cooling".

IN ACCORDANCE WITH REFERENCE PROCEDURE

INITIALS

1. PREREQUISITES/INITIAL CONDITIONS COMPLETED

2. PRECAUTIONS NOTED

3. COMMENTS: (IF MAINTENANCE RESTORATION, INDICATE BELOW WORK ORDER #, ETC.)

SM/US Notified of Failed Surveillance

Initials: _____

4. DATA

Sample date and time: _____

Spent fuel pool boron concentration = _____ ppm

Chem Form 3866-1

Rev. 3

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