

ENCLOSURE 2

HYDROGEN MITIGATION SYSTEM

PROPOSED TECHNICAL SPECIFICATIONS

Marked-up Technical Specification and Bases Pages:

3.6-22

3.6-23

B 3.6-54

9805060265 980429  
PDR ADOCK 05000390  
P PDR

3.6 CONTAINMENT SYSTEMS

3.6.8 Hydrogen Mitigation System (HMS)

INSERT

LCO 3.6.8 Two HMS trains shall be OPERABLE. (\* See Note below)

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One HMS train inoperable.</p> <p>* See Note below</p>	<p>A.1 Restore HMS train to OPERABLE status.</p> <p>OR</p> <p>A.2 Perform SR 3.6.8.1 on the OPERABLE train.</p>	<p>7 days</p> <p>Once per 7 days</p>
<p>B. One containment region with no OPERABLE hydrogen ignitor.</p> <p>* See Note below</p>	<p>B.1 Restore one hydrogen ignitor in the affected containment region to OPERABLE status.</p>	<p>7 days</p>
<p>C. Required Action and associated Completion Time not met.</p>	<p>C.1 Be in MODE 3.</p>	<p>6 hours</p>

INSERT

\* NOTE  
 For the time period between May \_\_, 1998, and the next WBN Unit 1 entry into MODE 3, HMS Train A is considered OPERABLE with 32 of 34 ignitors OPERABLE. The following additional CONDITION and REQUIRED ACTION applies:

CONDITION  
 Reactor Cavity Region (Hydrogen Ignitors 30A and 46B) and Steam Generator No. 4 Enclosure Lower Compartment Region (Hydrogen Ignitors 31A and 45B) with no OPERABLE hydrogen ignitor.

REQUIRED ACTION/COMPLETION TIME  
 Restore one hydrogen ignitor in each region to OPERABLE status within 72 hours.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.8.1	Energize each HMS train power supply breaker and verify $\geq 33^*$ ignitors are energized in each train. <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">* See Note below</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px; margin-left: 100px;">INSERT</div>	92 days*
SR 3.6.8.2	Verify at least one hydrogen ignitor is OPERABLE in each containment region.	92 days
SR 3.6.8.3	Energize each hydrogen ignitor and verify temperature is $\geq 1700^\circ\text{F}$ .	18 months

\* NOTE  
 For the time period between May \_\_, 1998, and the next WBN Unit 1 entry into MODE 3, SR 3.6.8.1 shall verify  $\geq 32$  ignitors are OPERABLE on HMS Train A at a frequency of 46 days.

## BASES

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### SURVEILLANCE REQUIREMENTS

SR 3.6.8.3 (continued)

experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

INSERT ATTACHED →

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### REFERENCES

1. Title 10, Code of Federal Regulations, Part 50.44, "Standards for Combustible Gas Control Systems in Light Water-Cooled Power Reactors."
2. Title 10, Code of Federal Regulations, Part 50, Appendix A, General Design Criterion 41, "Containment Atmosphere Cleanup."
3. Watts Bar FSAR, Section 6.2.5A, "Hydrogen Mitigation System Description."

INSERT

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4. TVA letter to NRC from P. L. Pace, "WBN Unit 1 - Request for TS Amendment for TS 3.6.8 - Hydrogen Mitigation System (HMS) (TS-98-011)." April 29, 1998.

BASES INSERT

Insert the following into the TS BASES for 3.6.8 on page B 3.6-54.

TEMPORARY CONDITION

LCO 3.6.8 is modified by Notes that provide temporary requirements for the HMS due to a condition discovered on April 3, 1998, wherein two Train A ignitors (30A and 31A) were found inoperable during surveillance testing. The ignitors are located in high radiation and temperature areas of Unit 1 containment and should be repaired with the reactor offline to avoid personnel safety hazards associated with making repairs online. The Notes are justified in Reference 4 on the basis the HMS will still be capable of performing its intended function. The Notes establish the following for the temporary period:

- (1) This temporary specification will expire at WBN's next entry into MODE 3.
- (2) The BASES of LCO 3.6.8 on page B 3.6-51 is modified by defining that HMS Train A is considered OPERABLE with 32 of 34 ignitors OPERABLE. This allowance is only permitted for the condition where ignitors 30A and 31A are the only inoperable A-train ignitors.
- (3) CONDITION B of LCO 3.6.8 is modified to allow two specific containment regions (Reactor Cavity Region and Steam Generator No. 4 Enclosure Lower Compartment Region) to have no OPERABLE ignitors for a period up to 72 hours.
- (4) SR 3.6.8.1 is modified to permit  $\geq$  32 ignitors energized for HMS Train A to demonstrate operability. The testing must be performed at an increased frequency of 46 days.

ENCLOSURE 3

HYDROGEN MITIGATION SYSTEM

PROPOSED TECHNICAL SPECIFICATIONS

Technical Specification and Bases (Revised Pages):

3.6-22

3.6-23

B 3.6-54

3.6 CONTAINMENT SYSTEMS

3.6.8 Hydrogen Mitigation System (HMS)

LCO 3.6.8 Two HMS trains shall be OPERABLE. (\* See Note below)

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One HMS train inoperable.  * See Note below	A.1 Restore HMS train to OPERABLE status. <u>OR</u> A.2 Perform SR 3.6.8.1 on the OPERABLE train.	7 days  Once per 7 days
B. One containment region with no OPERABLE hydrogen ignitor.  * See Note below	B.1 Restore one hydrogen ignitor in the affected containment region to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

\* NOTE

For the time period between May \_\_\_\_, 1998, and the next WBN Unit 1 entry into MODE 3, HMS Train A is considered OPERABLE with 32 of 34 ignitors OPERABLE. The following additional CONDITION and REQUIRED ACTION applies:

CONDITION

Reactor Cavity Region (Hydrogen Ignitors 30A and 46B) and Steam Generator No. 4 Enclosure Lower Compartment Region (Hydrogen Ignitors 31A and 45B) with no OPERABLE hydrogen ignitor.

REQUIRED ACTION/COMPLETION TIME

Restore one hydrogen ignitor in each region to OPERABLE status within 72 hours.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.8.1	Energize each HMS train power supply breaker and verify $\geq 33^*$ ignitors are energized in each train.  * See Note below	92 days*
SR 3.6.8.2	Verify at least one hydrogen ignitor is OPERABLE in each containment region.	92 days
SR 3.6.8.3	Energize each hydrogen ignitor and verify temperature is $\geq 1700^\circ\text{F}$ .	18 months

\* NOTE

For the time period between May \_\_\_\_, 1998, and the next WBN Unit 1 entry into MODE 3, SR 3.6.8.1 shall verify  $\geq 32$  ignitors are OPERABLE on HMS Train A at a frequency of 46 days.

## BASES

SURVEILLANCE  
REQUIREMENTSSR 3.6.8.3 (continued)

experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

TEMPORARY  
CONDITION

LCO 3.6.8 is modified by Notes that provide temporary requirements for the HMS due to a condition discovered on April 3, 1998, wherein two Train A ignitors (30A and 31A) were found inoperable during surveillance testing. The ignitors are located in high radiation and temperature areas of Unit 1 containment and should be repaired with the reactor offline to avoid personnel safety hazards associated with making repairs online. The Notes are justified in Reference 4 on the basis the HMS will still be capable of performing its intended function. The Notes establish the following for the temporary period:

- (1) This temporary specification will expire at WBN's next entry into MODE 3.
- (2) The BASES of LCO 3.6.8 on page B 3.6-51 is modified by defining that HMS Train A is considered OPERABLE with 32 of 34 ignitors OPERABLE. This allowance is only permitted for the condition where ignitors 30A and 31A are the only inoperable A-train ignitors.
- (3) CONDITION B of LCO 3.6.8 is modified to allow two specific containment regions (Reactor Cavity Region and Steam Generator No. 4 Enclosure Lower Compartment Region) to have no OPERABLE ignitors for a period up to 72 hours.
- (4) SR 3.6.8.1 is modified to permit  $\geq 32$  ignitors energized for HMS Train A to demonstrate operability. The testing must be performed at an increased frequency of 46 days.

## REFERENCES

1. Title 10, Code of Federal Regulations, Part 50.44, "Standards for Combustible Gas Control Systems in Light Water-Cooled Power Reactors."
2. Title 10, Code of Federal Regulations, Part 50, Appendix A, General Design Criterion 41, "Containment Atmosphere Cleanup."
3. Watts Bar FSAR, Section 6.2.5A, "Hydrogen Mitigation System Description."
4. TVA letter to NRC from P. L. Pace, "WBN Unit 1 - Request for TS Amendment for TS 3.6.8 - Hydrogen Mitigation System (HMS) (TS-98-011)," April 29, 1998.