



11H3

52-001

**GE Nuclear Energy**

ABWR

Date 10/12/92

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Subject IST Changes.

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ABWR  
Standard Plant23A6100AE  
Rev. B

Table 3.9-8 (Continued)

## INSERVICE TESTING SAFETY-RELATED PUMPS AND VALVES

## NOTES:

- (a) 1, 2, or 3 - Safety Classification, SSAR Subsection 3.2.3.
- (b) Pump test parameters per ASME ~~OM Code 1990, Subsection ISTB~~ *1/ANSI OMa-1988 Addenda to ASME/ANSI OM-1987; Part 6*
- N - Speed  
Pd - Discharge Pressure  
Pi - Inlet Pressure  
Q - Flow Rate  
Vd - Peak-to-peak vibration displacement  
Vv - Peak vibration velocity
- (c) A, B, C or D - Valve category per ASME ~~OM Code 1990, Subsection ISTC~~ *1/ANSI OMa-1988 Addenda to ASME/ANSI OM-1987; Part 6*
- (d) Valve function:  
I - Primary containment isolation, SSAR Subsection 6.2.4  
A or P - Active or passive per ASME Code in (c) above (Paragraph ~~STC 1.3~~) *Part 10*
- (e) Valve test parameters per ASME Code in (c) above:  
L - Leakage rate (Paragraph ~~STC 4.3~~ *4.2.2* SSAR Table 6.2-7 for valves with function I in (d) above) *Part 10*  
P - Local position verification (Paragraph ~~STC 4.1~~) *Part 10*  
R - Relief valve test including visual examination and pressure and seat tightness testing (Paragraph ~~STC 4.4~~) *4.3.1 & Part 1, Paragraph 1.2.2 & 1.3.4*  
S - Stroke exercise Category A or B (Paragraphs ~~STC 4.2.1, 4.2.2~~) *4.2.1.1, 4.2.1.2*  
*Part 10* Category C (Paragraphs ~~STC 4.3.1, 4.3.2~~) *Part 10*  
*Part 10* X - Explosive charge test (Paragraph ~~STC 4.4~~) *4.3.2.1, 4.3.2.2, 4.3.2.4*  
*Part 10, 4.4.1*
- (f) Pump or valve test exclusions, alternatives and frequency per ASME Code in (b) or (c) above or Appendix I:  
CS - Cold shutdown  
RO - Refueling outage and/or no case greater than two years.  
E1 - Used for operating convenience, i.e., passive vent, drain, instrument test, maintenance valves, or a system control valve. Test are not required (Paragraph ~~STC 1.2~~) *Part 10*  
E2 - In regular use. Test frequency is not required provided the test parameters are analyzed and recorded at an operation interval not exceeding three months.  
*Part 10* Category A or B, Stroke (Paragraph ~~STC 4.2.5~~) *4.2.1.5*  
Category C, stroke (Paragraph ~~STC 4.3.3~~) *4.3.2.3*  
E3 - Operability test every six months. Set pressure and leak test every refueling outage. (ASME OM Code-1990, Appendix I 1.3.4.3) *Part 1, Paragraph 1.3.4.3*  
E10 - In Regular use. Test frequency is not required provided the test parameters are recorded at least once every three months of operation (Paragraph ~~STC 3.3~~) *Part 6*  
E11 - Lacking required fluid inventory. Test shall be performed at least once every two years with required fluid inventory provided (Paragraph ~~STC 3.5~~) *Part 6*

# ABWR Standard Plant

23A6100AB

Rev. F

Table 3.9-8 (Continued)

## INS VICE TESTING SAFETY-RELATED PUMPS AND VALVES

### NOTES (Cont'd)

(g) Piping and instrument symbols and abbreviations are defined in Figure 1.7-1. Figure page numbers are shown in parenthesis ( ).

(h) Reasons for code defined testing exceptions (Paragraphs ISTC 4.2.2, 4.5.2).

(h1) Inaccessible inerted containment and/or steam tunnel radiation during power operations.

(h2) Avoids valve damage and impacts on power operations.

(h3) Avoids impacts on power operations.

(h4) A temporary ~~crustic~~ <sup>crustic</sup> is necessary to carry the ongoing cooling loads. *A permanent crustic would violate divisional separation.*

(h5) Avoids cold/hot water injection to RPV during power operations.

(h6) Maintain pressure isolation during normal operation.

(h7) Inventory available only during refueling outage.

(h8) RHR backup to FPC is exercised at refueling outage. Testing at RO frequency is justified because valve operation is needed only during a refueling outage.

(i) Summary justification for code exemption request (Paragraph ISTB 5.2, ISTC 6.2).

(i1) Positive displacement pump - Pi not significant

(i2) The piping is maintained full by a small fraction of the pump's flow capacity. The pumps may be a constant speed centrifugal type with a cooling by-pass loop.

(i3) Accessories with the two RIP motor replacements at every RO

*Normal operation will be near minimum flow in the flat or constant region of the pressure/flow performance curve.*

*Therefore, a flow measurement would not be useful. The pumps will be designed and analyzed to withstand low flow operation without significant degradation.*

(h9) *Test connection size is insufficient for full flow test during operation. Therefore, Test port stroke during plant operation and full stroke during refueling outage. A Test connection size which would be sufficient for full flow tests would pressurize the secondary containment beyond specified limits, thus affecting power operation.*

(h8) *Testing at power will impact operation because the valves do not automatically isolate with a LOCA signal.*

# < TRANSACTION REPORT >

10-13-1992(TUE) 11:29

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