

# LIMITING CONDITIONS FOR OPERATION

# SURVEILLANCE

# REQUIREMENTS

3.6.F.2.c. When the time limits or maximum conductivity or chloride concentration limits are exceeded, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown Condition within 24 hours.

4.6.F.2.c.3. Primary coolant pH shall be measured at least once every 8 hours whenever reactor coolant conductivity is  $> 2.0 \mu\text{mho/cm}$  at  $25^\circ\text{C}$ .

d. Whenever the reactor is not pressurized, a sample of the reactor coolant shall be analyzed at least every 96 hours for chloride ion content and pH.

## G. Reactor Coolant Leakage\*

### 1. Unidentified and Total

Any time irradiated fuel is in the reactor vessel and reactor coolant temperature is above  $212^\circ\text{F}$ :

- a. reactor coolant system leakage into the primary containment from unidentified sources shall not exceed 5 gpm;
- b. reactor coolant system leakage into the primary containment from unidentified sources shall not increase more than 2 gpm within a 24-hour period or less; and
- c. the total reactor coolant system leakage into the primary containment shall not exceed 25 gpm within any 24-hour period.

When checked in accordance with 4.6.G.

### 2. Leakage Detection Systems

- a. At least one of the leakage measurement instruments associated with each sump shall be operable and two of the other three leakage detection systems identified in Table 3.2-10, note c shall be operable when irradiated fuel is

## G. Reactor Coolant Leakage

Unidentified sources of reactor coolant system leakage shall be checked by the drywell floor drain sump system and recorded at least once per 8 hours. Identified sources of reactor coolant system leakage shall be checked by the equipment drain sump system and recorded at least once per 8 hours. The readings provided by the primary containment atmosphere particulate radioactivity monitoring system, the primary containment radioiodine monitoring system, and the primary containment gaseous radioactivity monitoring system shall also be recorded at least once per 8 hours.

\*Not required during performance of an inservice hydrostatic or leakage test even if reactor coolant temperature is above  $212^\circ\text{F}$ .

G. Reactor Coolant Leakage2. Leakage Detection Systems (Cont'd)

## a. (Continued)

in the reactor vessel and reactor coolant temperature is above 212°F. Further, the primary containment atmosphere particulate radioactivity monitoring system shall be among these two operable systems, or samples shall be obtained and analyzed at least once each 8 hours. |

b. From and after the date that any two of the four systems identified in Table 3.2-10, note c are made or found to be inoperable, but with the primary containment atmosphere particulate radioactivity monitoring system operable, reactor power operation may continue for the succeeding 30 days provided the primary containment atmosphere particulate radioactivity monitoring system reading is checked and recorded at least once each 8 hours. |

c. From and after the date that any two of the four systems, including the primary containment atmosphere particulate radioactivity monitoring system, identified in Table 3.2-10, note c are made or found to be inoperable, reactor power operation may continue for the succeeding 30 days provided samples of the containment atmosphere are obtained and analyzed at least once each 8 hours. |

3.6.K. STRUCTURAL INTEGRITY1. Normal Condition

The structural integrity of ASME Code Class 1, 2, and 3 (equivalent) components shall be maintained in accordance with the Surveillance Requirements of Specification 4.6.K.

2. Off-Normal Conditions

- a. With the structural integrity of any ASME Code Class 1 component not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature more than 50°F above the minimum temperature required by NDT considerations.
- b. With the structural integrity of any ASME Code Class 2 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature above 212°F.
- c. With the structural integrity of any ASME Code Class 3 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) from service.

4.6.K. STRUCTURAL INTEGRITY

Surveillance Requirements for in-service inspection and testing of ASME Code Class 1, 2, and 3 (equivalent) components shall be applicable as follows:

1. In-service inspection of ASME Code Class 1, 2, and 3 (equivalent) components and in-service testing of ASME Code Class 1, 2, and 3 (equivalent) pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10CFR50, Section 50.55a(g), except where specific relief has been granted by the Commission pursuant to 10CFR50, Section 50.55a(g) (6) (1).
2. Performance of the above in-service inspection and testing activities shall be in addition to other specified Surveillance Requirements.
3. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.
4. The Inservice Inspection Program for piping identified in NRC Generic Letter 88-01 shall be performed in accordance with the staff positions on schedule, methods and personnel, and sample expansion included in the generic letter, except where specific written relief has been granted by the Commission.

## APPLICABILITY

### SURVEILLANCE REQUIREMENTS (Continued)

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- b. A total maximum combined interval time for any 3 consecutive surveillance intervals not to exceed 3.25 times the specified surveillance interval.

4.0.3 Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with OPERABILITY requirements for a Limiting Condition for Operation and associated ACTION statements unless otherwise required by the specification. Surveillance requirements do not have to be performed on inoperable equipment.

4.0.4 Entry into an OPERATIONAL CONDITION or other specified applicable state shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the applicable surveillance interval or as otherwise specified.

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2, & 3 components shall be applicable as follows:

- a. Inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section XI 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).
- b. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice inspection and testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications:

### 3/4.0 APPLICABILITY

#### SURVEILLANCE REQUIREMENTS (Continued)

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ASME Boiler and Pressure Vessel  
Code and applicable Addenda  
terminology for inservice  
inspection and testing activities

Required frequencies  
for performing inservice  
inspection and testing  
activities

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Weekly  
Monthly  
Quarterly or every 3 months  
Semiannually or every 6 months  
Yearly or annually

At least once per 7 days  
At least once per 31 days  
At least once per 92 days  
At least once per 184 days  
At least once per 366 days

- c. The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities.
- d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.
- e. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.
- f. The Inservice Inspection Program for piping identified in NRC Generic Letter 88-01 shall be performed in accordance with the staff positions on schedule, methods and personnel, and sample expansion included in the generic letter, except where specific written relief has been granted by the Commission.

## REACTOR COOLANT SYSTEM

### 3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE

#### LEAKAGE DETECTION SYSTEMS

#### LIMITING CONDITION FOR OPERATION

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3.4.3.1 The following reactor coolant system leakage detection systems shall be OPERABLE:

- a. The primary containment atmosphere particulate radioactivity monitoring system,
- b. The primary containment floor drain and equipment sump level and flow monitoring systems, and
- c. The primary containment gaseous radioactivity monitoring system.

APPLICABILITY: CONDITIONS 1, 2 and 3.

#### ACTION:

- a. With either the primary containment atmosphere particulate radioactivity monitoring system or the primary containment gaseous radioactivity monitoring system inoperable, operation may continue for 30 days provided grab samples of the containment atmosphere are obtained and analyzed at least once per 8 hours;
- b. With at least one leakage monitoring instrument OPERABLE for both the primary containment floor drain sump and the equipment sump, operation may continue for 30 days;
- c. Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

#### SURVEILLANCE REQUIREMENTS

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4.4.3.1 The leakage detection systems shall be demonstrated OPERABLE by:

- a. Primary containment atmosphere gaseous and particulate monitoring system-performance of a CHANNEL CHECK at least once per 8 hours, a CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION at least once per 18 months.
- b. Primary containment sump level and flow monitoring system-performance of a sensor check at least once per 8 hours, CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION at least once per 18 months.

## REACTOR COOLANT SYSTEM

### OPERATIONAL LEAKAGE

#### LIMITING CONDITION FOR OPERATION

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3.4.3.2 Reactor coolant system leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE,
- b. 5 gpm UNIDENTIFIED LEAKAGE,
- c. 25 gpm total leakage averaged over any 24-hour period, and
- d. 2 gpm increase in UNIDENTIFIED LEAKAGE within a 24-hour period or less.

APPLICABILITY: CONDITIONS 1, 2 and 3.

#### ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT SHUT-DOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- b. With any reactor coolant system leakage greater than the limits specifically in b or c above, reduce the leakage rate to within the limits within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- c. With any reactor coolant system leakage greater than the limits specified in d above, reduce the leakage rate to within the limits within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

#### SURVEILLANCE REQUIREMENTS

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4.4.3.2 The reactor coolant system leakage shall be demonstrated to be within each of the above limits by:

- a. Monitoring the primary containment floor drain sump and equipment sump levels and flow rates at least once per 8 hours, and
- b. Monitoring the primary containment atmospheric particulate and gaseous radioactivity at least once per 8 hours.



## LIMITING CONDITIONS FOR OPERATION

## SURVEILLANCE REQUIREMENTS

3.6.F.2.c. When the time limits or maximum conductivity or chloride concentration limits are exceeded, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown Condition within 24 hours.

4.6.F.2.c.3. Primary coolant pH shall be measured at least once every 8 hours whenever reactor coolant conductivity is  $> 2.0 \mu\text{mho/cm}$  at  $25^\circ\text{C}$ .

d. Whenever the reactor is not pressurized, a sample of the reactor coolant shall be analyzed at least every 96 hours for chloride ion content and pH.

### G. Reactor Coolant Leakage\*

#### 1. Unidentified and Total

Any time irradiated fuel is in the reactor vessel and reactor coolant temperature is above  $212^\circ\text{F}$ :

a. reactor coolant system leakage into the primary containment from unidentified sources shall not exceed 5 gpm; ~~when averaged over a 24-hour period;~~

b. reactor coolant system leakage into the primary containment from unidentified sources shall not increase more than 2 gpm ~~when averaged over a 24-hour period;~~ and

c. the total reactor coolant system leakage into the primary containment shall not exceed 25 gpm when averaged over ~~any~~ 24-hour period;

when checked in accordance with 4.6.G.

#### 2. Leakage Detection Systems

a. At least one of the leakage measurement instruments associated with each sump shall be operable and two of the other three leakage detection systems identified in Table 3.2-10, note c shall be operable when irradiated fuel is

### G. Reactor Coolant Leakage

Unidentified sources of reactor coolant system leakage shall be checked by the drywell floor drain sump system and recorded at least once per ~~4~~ 8 hours. Identified sources of reactor coolant system leakage shall be checked by the equipment drain sump system and recorded at least once per ~~4~~ hours. The readings provided by the primary containment atmosphere particulate radioactivity monitoring system, the primary containment radioiodine monitoring system, and the primary containment gaseous radioactivity monitoring system shall also be recorded at least once per ~~4~~ 8 hours.

Within a 24-hour period or less

\*Not required during performance of an inservice hydrostatic or leakage test even if reactor coolant temperature is above  $212^\circ\text{F}$ .



G. Reactor Coolant Leakage2. Leakage Detection Systems (Cont'd)

## a. (Continued)

in the reactor vessel and reactor coolant temperature is above 212°F. Further, the primary containment atmosphere particulate radioactivity monitoring system shall be among these two operable systems, or samples shall be obtained and analyzed at least once each 8 hours.

- b. From and after the date that any two of the four systems identified in Table 3.2-10, note c are made or found to be inoperable, but with the primary containment atmosphere particulate radioactivity monitoring system operable, reactor power operation may continue for the succeeding 30 days provided the primary containment atmosphere particulate radioactivity monitoring system reading is checked and recorded at least once each 8 hours.

- c. From and after the date that any two of the four systems, including the primary containment atmosphere particulate radioactivity monitoring system, identified in Table 3.2-10, note c are made or found to be inoperable, reactor power operation may continue for the succeeding 30 days provided samples of the containment atmosphere are obtained and analyzed at least once each 8 hours.

3.6.K. STRUCTURAL INTEGRITY1. Normal Condition

The structural integrity of ASME Code Class 1, 2, and 3 (equivalent) components shall be maintained in accordance with the Surveillance Requirements of Specification 4.6.K.

2. Off-Normal Conditions

- a. With the structural integrity of any ASME Code Class 1 component not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature more than 50°F above the minimum temperature required by NDI considerations.
- b. With the structural integrity of any ASME Code Class 2 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature above 212°F.
- c. With the structural integrity of any ASME Code Class 3 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) from service.

4.6.K. STRUCTURAL INTEGRITY

Surveillance Requirements for in-service inspection and testing of ASME Code Class 1, 2, and 3 (equivalent) components shall be applicable as follows:

1. In-service inspection of ASME Code Class 1, 2, and 3 (equivalent) components and in-service testing of ASME Code Class 1, 2, and 3 (equivalent) pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10CFR50, Section 50.55a(g), except where specific relief has been granted by the Commission pursuant to 10CFR50, Section 50.55a(g) (6) (1).
2. Performance of the above in-service inspection and testing activities shall be in addition to other specified Surveillance Requirements.
3. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.
4. The Inservice Inspection Program for piping identified in NRC Generic Letter EP-01 shall be performed in accordance with the staff positions on schedule, methods and personnel, and sample expansion included in the generic letter, except where specific written relief has been granted by the Commission.

## APPLICABILITY

### SURVEILLANCE REQUIREMENTS (Continued)

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- b. A total maximum combined interval time for any 3 consecutive surveillance intervals not to exceed 3.25 times the specified surveillance interval.

4.0.3 Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with OPERABILITY requirements for a Limiting Condition for Operation and associated ACTION statements unless otherwise required by the specification. Surveillance requirements do not have to be performed on inoperable equipment.

4.0.4 Entry into an OPERATIONAL CONDITION or other specified applicable state shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the applicable surveillance interval or as otherwise specified.

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2, & 3 components shall be applicable as follows:

~~a. During the time period:~~

- ~~1. From issuance of the Facility Operating License to the start of facility commercial operation, inservice testing of ASME Code Class 1, 2, & 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code 1974 Edition, and Addenda through summer 1975, except where specific written relief has been granted by the Commission.~~
- a. ~~2. Following start of facility commercial operation, Inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g) (6) (i).~~
- b. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice inspection and testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications:

### 3/4.0 APPLICABILITY

#### SURVEILLANCE REQUIREMENTS (Continued)

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ASME Boiler and Pressure Vessel  
Code and applicable Addenda  
terminology for inservice  
inspection and testing activities

Required frequencies  
for performing inservice  
inspection and testing  
activities

Weekly  
Monthly  
Quarterly or every 3 months  
Semiannually or every 6 months  
Yearly or annually

At least once per 7 days  
At least once per 31 days  
At least once per 92 days  
At least once per 184 days  
At least once per 366 days

- c. The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities.
- d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.
- e. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.
- f. The Inservice Inspection Program for piping identified in NRC Generic Letter EP-01 shall be performed in accordance with the staff positions on schedule, methods and personnel, and sample expansion included in the generic letter, except where specific written relief has been granted by the Commission.

## REACTOR COOLANT SYSTEM

### 3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE

#### LEAKAGE DETECTION SYSTEMS

#### LIMITING CONDITION FOR OPERATION

3.4.3.1 The following reactor coolant system leakage detection systems shall be OPERABLE:

- The primary containment atmosphere particulate radioactivity monitoring system,
- The primary containment floor drain and equipment sump level and flow monitoring systems, and
- The primary containment gaseous radioactivity monitoring system.

APPLICABILITY: CONDITIONS 1, 2 and 3.

ACTION: (REFER TO PAGE 3/4 4-5a FOR NEW ACTION)

~~With only two of the above required leakage detection system OPERABLE operation may continue for up to 30 days provided grab samples of the containment atmosphere are obtained and analyzed at least once per 24 hours when the required gaseous or particulate radioactive monitoring system is inoperable; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.~~

#### SURVEILLANCE REQUIREMENTS

4.4.3.1 The leakage detection systems shall be demonstrated OPERABLE by:

- Primary containment atmosphere gaseous and particulate monitoring system-performance of a CHANNEL CHECK at least once per 12 hours, a CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION at least once per 18 months.
- Primary containment sump level and flow monitoring system-performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION at least once per 18 months.

sensor check at least once per 4 hours,

ACTION:

- a. With either the primary containment atmosphere particulate radioactivity monitoring system or the primary containment gaseous radioactivity monitoring system inoperable, operation may continue for up to 30 days provided grab samples of the containment atmosphere are obtained and analyzed at least once per 4 hours;
- b. With at least one leakage monitoring instrument OPERABLE for both the primary containment floor drain sump and the equipment sump, operation may continue for 30 days;
- c. Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.



## REACTOR COOLANT SYSTEM

### OPERATIONAL LEAKAGE

#### LIMITING CONDITION FOR OPERATION

3.4.3.2 Reactor coolant system leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE,
- b. 5 gpm UNIDENTIFIED LEAKAGE,
- c. 25 gpm total leakage averaged over any 24 hour period, and
- d. 2 gpm increase in UNIDENTIFIED LEAKAGE within any 24-hour period, or less

APPLICABILITY: CONDITIONS 1, 2 and 3.

#### ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- b. With any reactor coolant system leakage greater than the limits specifically in b or c above, reduce the leakage rate to within the limits within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- c. With any reactor coolant system leakage greater than the limits specified in d above, reduce the leakage rate to within the limits within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

#### SURVEILLANCE REQUIREMENTS

4.4.3.2 The reactor coolant system leakage shall be demonstrated to be within each of the above limits by:

- a. Monitoring the primary containment floor drain sump and equipment sump levels and flow rates at least once per 12 hours, and
- b. Monitoring the primary containment atmospheric particulate and gaseous radioactivity at least once per 12 hours.