3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The Engineered Safety Features Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS Instrumentation or Interlock Trip Setpoint less conservative than the value shown in the Trip Setpoint column but more conservative than the value shown in the Allowable Value column of Table 3.3-4 adjust the Setpoint consistent with the Trip Setpoint value.

b. With an ESFAS Instrumentation or Interlock Trip Setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, either:

   1. Adjust the Setpoint consistent with the Trip Setpoint value of Table 3.3-4 and determine within 12 hours that Equation 2.2-1 was satisfied for the affected channel, or

   2. Declare the channel inoperable and apply the applicable ACTION statement requirements of Table 3.3.3 until the channel is restored to OPERABLE status within its Setpoint adjusted consistent with the Trip Setpoint value.

   Equation 2.2-1 $Z + R + S \leq TA$

   Where:

   Z = The value from Column Z of Table 3.3-4 for the affected channel,
   R = The "as measured" value (in percent span) of rack error for the affected channel,
   S = Either the "as measured" value (in percent span) of the sensor error, or the value from Column S (Sensor Error) of Table 3.3-4 for the affected channel, and
   TA = The value from Column TA (Total Allowance) of Table 3.3-4 for the affected channel.

c. With an ESFAS instrumentation channel or interlock inoperable, take the ACTION shown in Table 3.3-3.

INSERT "A" From Attached page

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each ESFAS instrumentation channel and interlock and the automatic actuation logic and relays shall be demonstrated OPERABLE by the performance of the ESFAS Instrumentation Surveillance Requirements specified in Table 4.3-2.

4.3.2.2 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one train such that both trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" Column of Table 3.3-3.

9602130108 960209
PDR ADOCK 05000483
P PDR

Insert "A"

(the provisions of Specification 4.0.4 are not applicable for the steam turbine-driven auxiliary feedwater pump for entry into MODE 3. The ENGINEERED SAFETY FEATURES RESPONSE TIME testing for the steam turbine-driven auxiliary feedwater pump is required to be completed within 24 hours after attaining ≥900 psig in all steam generators).

LIMITING CONDITION FOR OPERATION

ACTION: Continued

e. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

f. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.7.1.2.1 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

~~a.~~ b

Insert from 3/4 7-5

At least once per ~~31~~ 92 days on a STAGGERED TEST BASIS by:

1) Verifying that each motor-driven pump develops a discharge pressure of greater than or equal to 1535 psig on recirculation flow when tested pursuant to Specification 4.0.5; and

2) Verifying that the steam turbine-driven pump develops a discharge pressure of greater than or equal to 1625 psig at a flow of greater than or equal to 120 gpm ~~when the secondary steam supply pressure is greater than 900 psig. The~~ provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

(required to be completed within 24 hours after attaining ≥ 900 psig in all steam generators - the

SURVEILLANCE REQUIREMENTS (Continued)

a. At least once per 31 days by:

~~3)~~ 1) Verifying that each non-automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position; and

~~4)~~ 2) Verifying that each automatic valve, other than AL-HV-30, 31, 32, and 33, in the flow path is in the fully open position whenever the Auxiliary Feedwater System is placed in automatic control or when above 10% RATED THERMAL POWER.

Move to Page 3/4 7-4a

~~b.~~ c. At least once per 18 months during shutdown by:

1) Verifying that automatic valves AL-HV-30, 31, 32, and 33 in the ESW supply to the auxiliary feedwater pumps actuate to their full open position upon receipt of an Auxiliary Feedwater Pump Suction Pressure-Low test signal,

2) Verifying that each motor-driven auxiliary feedwater pump starts as designed automatically upon receipt of an Auxiliary Feedwater Actuation test signal, and

3) Verifying that each auxiliary feedwater motor-operated discharge valve limits the flow to each steam generator from the motor-driven pump to less than or equal to 320 gpm.

4.7.1.2.2 An auxiliary feedwater flow path shall be demonstrated OPERABLE following each COLD SHUTDOWN of greater than 30 days prior to entering MODE 2 by verifying normal flow to at least two steam generators from one auxiliary feedwater pump.

Insert the following:

d. At least once per 18 months by verifying that the steam turbine-driven auxiliary feedwater pump starts as designed automatically upon receipt of an Auxiliary Feedwater Actuation Test signal (required to be completed within 24 hours after attaining ≥ 900 psig in all steam generators - the provisions of Specification 4.0.4 are not applicable for entry into MODE 3).

SAFETY VALVES (Continued)

109 = Power Range Neutron Flux-High Trip Setpoint for four loop operation,

X = Total relieving capacity of all safety valves per steam line in lbs/hour, and

Y = Maximum relieving capacity of any one safety valve in lbs/hour.

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the Auxiliary Feedwater System ensures that the Reactor Coolant System can be cooled down to less than 350°F from normal operating conditions in the event of a total loss-of-offsite power in conjunction with a feedwater line break to one steam generator.

Testing of each electric motor-driven auxiliary feedwater pump on a fixed orifice recirculation flow and ensuring a discharge pressure of greater than or equal to 1535 psig verifies the capability of each pump to deliver a total feedwater flow of 575 gpm at a pressure of 1221 psig, ~~to the entrance of the steam generators. The steam driven auxiliary feedwater pump is capable of delivering a total feedwater~~ flow of 1145 gpm at a pressure of 1221 psig, ~~to the entrance of the steam generators.~~ ~~This~~ capacity is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F when the RHR System may be placed into operation.

pump

steam generators

Steam generator

The

of any auxiliary feedwater pump

3/4.7.1.3 CONDENSATE STORAGE TANK

The OPERABILITY of the condensate storage tank with the minimum water volume ensures that sufficient water is available to maintain the RCS at HOT STANDBY conditions for 4 hours with steam discharge to the atmosphere concurrent with total loss-of-offsite power and then a cooldown to 350°F at 50°F per hour. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

3/4.7.1.4 SPECIFIC ACTIVITY

The limitations on Secondary Coolant System specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 dose guideline values in the event of a steam line rupture. This dose also includes the effects of a coincident 1 gpm reactor to secondary tube leak in the steam generator of the affected steam line. These values are consistent with the assumptions used in the safety analyses.

Testing the steam-turbine-driven auxiliary feedwater pump at greater than or equal to 120 gpm and ensuring a discharge pressure of greater than or equal to 1625 psig verifies the capability of the pump to deliver a total pump

Attachment 3

Re-typed Technical Specification Pages

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Page 3/4 7-4a
Page 3/4 7-5
Page B 3/4 7-2

3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The Engineered Safety Features Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS Instrumentation or Interlock Trip Setpoint less conservative than the value shown in the Trip Setpoint column but more conservative than the value shown in the Allowable Value column of Table 3.3-4 adjust the Setpoint consistent with the Trip Setpoint value.

b. With an ESFAS Instrumentation or Interlock Trip Setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, either:

   1. Adjust the Setpoint consistent with the Trip Setpoint value of Table 3.3-4 and determine within 12 hours that Equation 2.2-1 was satisfied for the affected channel, or

   2. Declare the channel inoperable and apply the applicable ACTION statement requirements of Table 3.3.3 until the channel is restored to OPERABLE status with its Setpoint adjusted consistent with the Trip Setpoint value.

   Equation 2.2-1 $Z + R + S \leq TA$

   Where:

   Z = The value from Column Z of Table 3.3-4 for the affected channel,
   R = The "as measured" value (in percent span) of rack error for the affected channel,
   S = Either the "as measured" value (in percent span) of the sensor error, or the value from Column S (Sensor Error) of Table 3.3-4 for the affected channel, and
   TA = The value from Column TA (Total Allowance) of Table 3.3-4 for the affected channel.

c. With an ESFAS instrumentation channel or interlock inoperable, take the ACTION shown in Table 3.3-3.

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each ESFAS instrumentation channel and interlock and the automatic actuation logic and relays shall be demonstrated OPERABLE by the performance of the ESFAS Instrumentation Surveillance Requirements specified in Table 4.3-2.

4.3.2.2 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months (the provisions of Specification 4.0.4 are not applicable for the steam turbine-driven auxiliary feedwater pump for entry into MODE 3. The ENGINEERED SAFETY FEATURES RESPONSE TIME testing for the steam turbine-driven auxiliary feedwater pump is required to be completed within 24 hours after attaining ≥900 psig in all steam generators). Each test shall include at least one train such that both trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" Column of Table 3.3-3.

LIMITING CONDITION FOR OPERATION

ACTION: Continued

e. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

f. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.7.1.2.1 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1) Verifying that each non-automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position; and

2) Verifying that each automatic valve, other than AL-HV-30, 31, 32, and 33, in the flow path is in the fully open position whenever the Auxiliary Feedwater System is placed in automatic control or when above 10% RATED THERMAL POWER.

b. At least once per 92 days on a STAGGERED TEST BASIS by:

1) Verifying that each motor-driven pump develops a discharge pressure of greater than or equal to 1535 psig on recirculation flow when tested pursuant to Specification 4.0.5; and

2) Verifying that the steam turbine-driven pump develops a discharge pressure of greater than or equal to 1625 psig at a flow of greater than or equal to 120 gpm (required to be completed within 24 hours after attaining $\geq$ 900 psig in all steam generators - the provisions of Specification 4.0.4 are not applicable for entry into MODE 3).

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months during shutdown by:

1) Verifying that automatic valves AL-HV-30, 31, 32, and 33 in the ESW supply to the auxiliary feedwater pumps actuate to their full open position upon receipt of an Auxiliary Feedwater Pump Suction Pressure-Low test signal,

2) Verifying that each motor-driven auxiliary feedwater pump starts as designed automatically upon receipt of an Auxiliary Feedwater Actuation test signal, and

3) Verifying that each auxiliary feedwater motor-operated discharge valve limits the flow to each steam generator from the motor-driven pump to less than or equal to 320 gpm.

d. At least once per 18 months by verifying that the steam turbine-driven auxiliary feedwater pump starts as designed automatically upon receipt of an Auxiliary Feedwater Actuation Test signal (required to be completed within 24 hours after attaining ≥ 900 psig in all steam generators - the provisions of Specification 4.0.4 are not applicable for entry into MODE 3).

4.7.1.2.2 An auxiliary feedwater flow path shall be demonstrated OPERABLE following each COLD SHUTDOWN of greater than 30 days prior to entering MODE 2 by verifying normal flow to at least two steam generators from one auxiliary feedwater pump.

SAFETY VALVES (Continued)

109 = Power Range Neutron Flux-High Trip Setpoint for four loop operation,

X = Total relieving capacity of all safety valves per steam line in lbs/hour, and

Y = Maximum relieving capacity of any one safety valve in lbs/hour.

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the Auxiliary Feedwater System ensures that the Reactor Coolant System can be cooled down to less than 350°F from normal operating conditions in the event of a total loss-of-offsite power in conjunction with a feedwater line break to one steam generator.

Testing of each electric motor-driven auxiliary feedwater pump on a fixed orifice recirculation flow and ensuring a discharge pressure of greater than or equal to 1535 psig verifies the capability of each pump to deliver a total pump flow of 575 gpm at a steam generator pressure of 1221 psig. Testing the steam turbine-driven auxiliary feedwater pump at greater than or equal to 120 gpm and ensuring a discharge pressure of greater than or equal to 1625 psig verifies the capability of the pump to deliver a total pump flow of 1145 gpm at a steam generator pressure of 1221 psig. The capacity of any auxiliary feedwater pump is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F when the RHR System may be placed into operation.

3/4.7.1.3 CONDENSATE STORAGE TANK

The OPERABILITY of the condensate storage tank with the minimum water volume ensures that sufficient water is available to maintain the RCS at HOT STANDBY conditions for 4 hours with steam discharge to the atmosphere concurrent with total loss-of-offsite power and then a cooldown to 350°F at 50°F per hour. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

3/4.7.1.4 SPECIFIC ACTIVITY

The limitations on Secondary Coolant System specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 dose guideline values in the event of a steam line rupture. This dose also includes the effects of a coincident 1 gpm reactor to secondary tube leak in the steam generator of the affected steam line. These values are consistent with the assumptions used in the safety analyses.