TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

| TRIP FUNCTION AND INSTRUMENT NUMBER | VALVE GROUPS OPERATED BY SIGNAL(a) | MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c) | APPLICABLE OPERATIONAL CONDITION | ACTION |
|---|---|---|---|---|
| 4. CORE STANDBY COOLING SYSTEMS ISOLATION | | | | |
| a. High Pressure Coolant Injection Isolation | | | | |
| 1. HPCI Steam Line Flow - High (E41-dPIS-N004 and E41-dPIS-N005) | 4 | 2 | 1, 2, 3 | 25 |
| 2. HPCI Steam Line High Flow Time Delay (E41-TDR-K43 and E41-TDR-K33) | 4 | 2 | 1, 2, 3 | 25 |
| 3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D) | 4 | 2 | 1, 2, 3 | 25 |
| 4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488 and E41-TS-3489) | 4 | 2 | 1, 2, 3 | 25 |
| 5. Bus Power Monitor (E41-K55 and E41-K56) | NA (h) | 1/bus | 1, 2, 3 | 26 |
| 6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D) | 4 | 2 | 1, 2, 3 | 25 |
| 7. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D) | 4 | 2 | 1, 2, 3 | 25 |
| 8. HPCI Steam Line Area Δ Temp. - High (E51-dTS-N604C,D) | 4 | 2 | 1, 2, 3 | 25 |
| 9. Emergency Area Cooler Temperature - High (E41-TS-N602A,B) | 4 | 2 | 1, 2, 3 | 25 |

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

| TRIP FUNCTION AND INSTRUMENT NUMBER | VALVE GROUPS OPERATED BY SIGNAL(a) | MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c) | APPLICABLE OPERATIONAL CONDITION | ACTION |
|---|---|---|---|---|
| b. Reactor Core Isolation Cooling System Isolation | | | | |
| 1. RCIC Steam Line Flow - High (E51-dPIS-N017 and E51-dPIS-N018) | 5 | 2 | 1, 2, 3 | 25 |
| 2. RCIC Steam Line High Flow Time Delay (E51-TDR-K12 and E51-TDR-K32) | 5 | 2 | 1, 2, 3 | 25 |
| 3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D) | 5 | 2 | 1, 2, 3 | 25 |
| 4. RCIC Steam Line Tunnel Temperature - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355 and E51-TS-3487) | 5 | 2 | 1, 2, 3 | 25 |
| 5. Bus Power Monitor (E51-K42 and E51-K43) | NA | 1/bus | 1, 2, 3 | 26 |
| 6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D) | 5 | 2 | 1, 2, 3 | 25 |
| 7. RCIC Steam Line Ambient Temp - High (E51-TS-N603A,B) | 5 | 2 | 1, 2, 3 | 25 |
| 8. RCIC Steam Line Area Δ Temp - High (E51-dTS-N604A,B) | 5 | 2 | 1, 2, 3 | 25 |
| 9. RCIC Equipment Room Ambient Temp - High (E51-TS-N602A,B) | 5 | 2 | 1, 2, 3 | 25 |
| 10. RCIC Equipment Room Δ Temp - High (E51-dTS-N601A,B) | 5 | 2 | 1, 2, 3 | 25 |

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPONTS

| TRIP FUNCTION AND INSTRUMENT NUMBER | TRIP SETPOINT | ALLOWABLE VALUE |
|---|---|---|
| 4. CORE STANDBY COOLING SYSTEMS ISOLATION | | |
| a. High Pressure Coolant Injection Isolation | | |
| 1. HPCI Steam Line Flow - High (E41-dPIS-N004 and E41-dPIS-N005) | $\leq$ 300% of rated flow | $\leq$ 300% of rated flow |
| 2. HPCI Steam Line High Flow Time Delay (E41-TDR-K43 and E41-TDR-K33) | $3 \leq t \leq 4$ seconds | $\leq$ 12 sec. |
| 3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D) | $\geq$ 100 psig | $\geq$ 100 psig |
| 4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488 and E41-TS-3489) | $\leq$ 200°F | $\leq$ 200°F |
| 5. Bus Power Monitor (E41-K55 and E41-K56) | NA | NA |
| 6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D) | $\leq$ 10 psig | $\leq$ 10 psig |
| 7. HPCI Steam Line Ambient Temp - High (E51-TS-N603C,D) | $\leq$ 200°F | $\leq$ 200°F |
| 8. HPCI Steam Line Area $\Delta$ Temp - High (E51-dTS-N604C,D) | $\leq$ 50°F | $\leq$ 50°F |
| 9. Emergency Area Cooler Temp - High (E41-TS-N602A,B) | $\leq$ 175°F | $\leq$ 175°F |

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPONTS

| TRIP FUNCTION AND INSTRUMENT NUMBER | TRIP SETPOINT | ALLOWABLE VALUE |
|---|---|---|
| b. Reactor Core Isolation Cooling System Isolation | | |
| 1. RCIC Steam Line Flow - High (E51-dPIS-N017 and dPIS-N018) | $\leq$ 300% of rated flow | $\leq$ 300% of rated flow |
| 2. RCIC Steam Line Flow High Time Delay (E51-TDR-K12 and E51-TDR-K32) | $3 \leq t \leq 4$ seconds | $\leq$ 12 sec. |
| 3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D) | $\geq$ 50 psig | $\geq$ 50 psig |
| 4. RCIC Steam Line Tunnel Temp - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355 and E51-TS-3487) | $\leq$ 175°F | $\leq$ 175°F |
| 5. Bus Power Monitor (E51-K42 and E51-K43) | NA | NA |
| 6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D) | $\leq$ 10 psig | $\leq$ 10 psig |
| 7. RCIC Steam Line Ambient Temp - High (E51-TS-N603A,B) | $\leq$ 200°F | $\leq$ 200°F |
| 8. RCIC Steam Line Area $\Delta$ Temp - High (E51-dTS-N604A,B) | $\leq$ 50°F | $\leq$ 50°F |
| 9. RCIC Equipment Room Ambient Temp - High (E51-TSS-N602A,B) | $\leq$ 175°F | $\leq$ 175°F |
| 10. RCIC Equipment Room $\Delta$ Temp - High (E51-dTS-N601A,B) | $\leq$ 50°F | $\leq$ 50°F |

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM RESPONSE TIME

| TRIP FUNCTION AND INSTRUMENT NUMBER | RESPONSE TIME (Seconds) |
|---|---|
| 3. REACTOR WATER CLEANUP SYSTEM ISOLATION | |
| a. Δ Flow - High (G31-dPS-N603-1A,1B) | ≤13 |
| b. Area Temperature - High (G31-TS-N602A,B,C,D,E,F) | ≤13 |
| c. Area Ventilation Temperature ΔT - High (G31-TS-N602A,B,C,D,E,F) | ≤13 |
| d. SLCS Initiation (G41A-S1) | NA |
| e. Reactor Vessel Water - Low, Level #2 (B21-LT-N024A-1, B-1 and B21-LT-N025A-1,B-1) B21-LTM-N024A-1,B-1 and B21-LTM-N025A-1,B-1) | ≤1.0** |
| 4. CORE STANDBY COOLING SYSTEMS ISOLATION | |
| a. High Pressure Coolant Injection Isolation | |
| 1. HPCI Steam Line Flow - High (E41-dPISN004 and E41-dPIS-N006) | ≤13*** |
| 2. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D) | ≤13 |
| 3. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488 and E41-TS-3489) | ≤13 |
| 4. Bus Power Monitor (E41-K55 and E41-K56) | NA |
| 5. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D) | NA |
| 6. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D) | NA |
| 7. HPCI Steam Line Area Δ Temp - High (E51-dTS-N604C,D) | NA |
| 8. Emergency Area Cooler Temperature - High (E41-TS-602A,B) | NA |

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM RESPONSE TIME

| TRIP FUNCTION AND INSTRUMENT NUMBER | RESPONSE TIME (Seconds) |
|---|---|
| b. Reactor Core Isolation Cooling System Isolation | |
| 1. RCIC Steam Line Flow - High (E51-dPIS-N017 and E51-dPIS-N018) | ≤13**** |
| 2. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D) | NA |
| 3. RCIC Steam Line Tunnel Temp - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355 and E51-TS-3487) | NA |
| 4. Bus Power Monitor (E51-K42 and E51-K43) | NA |
| 5. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D) | NA |
| 6. RCIC Steam Line Ambient Temperature - High (E51-TS-N603A,B) | NA |
| 7. RCIC Steam Line Area Δ Temp - High (E51-dTS-N604A,B) | NA |
| 8. Emergency Area Cooler Temperature - High (E51-TS-N602A,B) | NA |
| 9. RCIC Equipment Room Δ Temp - High (E51-dTS-N601A,B) | NA |
| 5. SHUTDOWN COOLING SYSTEM ISOLATION | |
| a. Reactor Vessel Water Level - Low, Level #1 (B21-LT-N017A-1,B-1,C-1,D-1) (B21-LTM-N017A-1,B-1,C-1,D-1) | NA |
| b. Reactor Steam Dome Pressure - High (B32-PS-N018A,B) | NA |

* Radiation monitors are exempt from response time testing. Response time shall be measured from detector output or the input of the first electronic component in the channel.

** Isolation actuation instrumentation response time only.

*** Includes time delay provided by time delay relays E41-TDR-K33 and E41-TDR-K43.

**** Includes time delay provided by time delay relays E51-TDR-K12 and E51-TDR-K32.

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| TRIP FUNCTION AND INSTRUMENT NUMBER | CHANNEL CHECK | CHANNEL FUNCTIONAL TEST | CHANNEL CALIBRATION | OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED |
|---|---|---|---|---|
| 4. CORE STANDBY COOLING SYSTEMS ISOLATION | | | | |
| a. High Pressure Coolant Injection Isolation | | | | |
| 1. HPCI Steamline Flow - High (E41-dPIS-N004 and E41-dPIS-N005) | D | M | Q | 1, 2, 3 |
| 2. HPCI Steam Line High Flow Time Delay (E41-TDR-K43 and E41-TDR-K33) | NA | M | Q | 1, 2, 3 |
| 3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D) | NA | M | R | 1, 2, 3 |
| 4. HPCI Steamline Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488 and E41-TS-3489) | NA | M | Q | 1, 2, 3 |
| 5. Bus Power Monitor (E41-K55 and E41-K56) | NA | R | NA | 1, 2, 3 |
| 6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D) | NA | M | Q | 1, 2, 3 |
| 7. HPCI Steam Line Ambient Temp - High (E51-TS-N603C,D) | NA | M | R | 1, 2, 3 |
| 8. HPCI Steam Line Area Δ Temp - High (E51-dTS-N604C,D) | NA | M | R | 1, 2, 3 |
| 9. Emergency Area Cooler Temp - High (E41-TS-N602A,B) | NA | M | Q | 1, 2, 3 |

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| TRIP FUNCTION AND INSTRUMENT NUMBER | CHANNEL CHECK | CHANNEL FUNCTIONAL TEST | CHANNEL CALIBRATION | OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED |
|---|---|---|---|---|
| b. Reactor Core Isolation Cooling System Isolation | | | | |
| 1. RCIC Steamline Flow-High (E51-dPIS-N017 and E51-dPIS-N018) | NA | M | Q | 1, 2, 3 |
| 2. RCIC Steam Line High Flow Time Delay (E51-TDR-K12 and E51-TDR-K32) | NA | M | Q | 1, 2, 3 |
| 3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D) | NA | M | Q | 1, 2, 3 |
| 4. RCIC Steamline Tunnel High Temperature (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355 and E51-TS-3487) | NA | M | R | 1, 2, 3 |
| 5. Bus Power Monitor (E51-K42 and E51-K43) | NA | R | NA | 1, 2, 3 |
| 6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D) | NA | M | R | 1, 2, 3 |
| 7. RCIC Steam Line Ambient Temp - High (E51-TS-N603A,B) | NA | M | R | 1, 2, 3 |
| 8. RCIC Steam Line Area Δ Temp - High (E51-dTS-N604A,B) | NA | M | R | 1, 2, 3 |
| 9. RCIC Equipment Room Ambient Temp - High (E51-TS-N602A,B) | NA | M | Q | 1, 2, 3 |
| 10. RCIC Equipment Room Δ Temp - High (E51-dTS-N601A,B) | NA | M | Q | 1, 2, 3 |

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

| TRIP FUNCTION AND INSTRUMENT NUMBER | VALVE GROUPS OPERATED BY SIGNAL(a) | MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c) | APPLICABLE OPERATIONAL CONDITION | ACTION |
|---|---|---|---|---|
| 4. CORE STANDBY COOLING SYSTEMS ISOLATION | | | | |
| a. High Pressure Coolant Injection Isolation | | | | |
| 1. HPCI Steam Line Flow - High (E41-dPIS-N004 and E41-dPIS-N005) | 4 | 2 | 1, 2, 3 | 25 |
| 2. HPCI Steam Line High Flow Time Delay (E41-TDR-K43 and E41-TDR-K33) | 4 | 2 | 1, 2, 3 | 25 |
| 3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D) | 4 | 2 | 1, 2, 3 | 25 |
| 4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488 and E41-TS-3489) | 4 | 2 | 1, 2, 3 | 25 |
| 5. Bus Power Monitor (E41-K55 and E41-K56) | NA (h) | 1/bus | 1, 2, 3 | 26 |
| 6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D) | 4 | 2 | 1, 2, 3 | 25 |
| 7. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D) | 4 | 2 | 1, 2, 3 | 25 |
| 8. HPCI Steam Line Area Δ Temp. - High (E51-dTS-N604C,D) | 4 | 2 | 1, 2, 3 | 25 |
| 9. Emergency Area Cooler Temperature - High (E41-TS-N602A,B) | 4 | 2 | 1, 2, 3 | 25 |

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

| TRIP FUNCTION AND INSTRUMENT NUMBER | VALVE GROUPS OPERATED BY SIGNAL(a) | MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c) | APPLICABLE OPERATIONAL CONDITION | ACTION |
|---|---|---|---|---|
| b. Reactor Core Isolation Cooling System Isolation | | | | |
| 1. RCIC Steam Line Flow-High (E51-dPIS-N017 and E51-dPIS-N018) | 5 | 2 | 1, 2, 3 | 25 |
| 2. RCIC Steam Line High Flow Time Delay (E51-TDR-K12 and E51-TDR-K32) | 5 | 2 | 1, 2, 3 | 25 |
| 3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D) | 5 | 2 | 1, 2, 3 | 25 |
| 4. RCIC Steam Line Tunnel Temperature - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355 and E51-TS-3487) | 5 | 2 | 1, 2, 3 | 25 |
| 5. Bus Power Monitor (E51-K42 and E51-K43) | NA (h) | 1/bus | 1, 2, 3 | 26 |
| 6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D) | 5 | 2 | 1, 2, 3 | 25 |
| 7. RCIC Steam Line Ambient Temp - High (E51-TS-N603A,B) | 5 | 2 | 1, 2, 3 | 25 |
| 8. RCIC Steam Line Area Δ Temp - High (E51-dTS-N604A,B) | 5 | 2 | 1, 2, 3 | 25 |
| 9. RCIC Equipment Room Ambient Temp-High (E51-TS-N602A,B) | 5 | 2 | 1, 2, 3 | 25 |
| 10. RCIC Equipment Room Δ Temp - High (E51-dTS-N601A,B) | 5 | 2 | 1, 2, 3 | 25 |

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPONTS

| TRIP FUNCTION AND INSTRUMENT NUMBER | TRIP SETPOINT | ALLOWABLE VALUE |
|---|---|---|
| 4. CORE STANDBY COOLING SYSTEMS ISOLATION | | |
| a. High Pressure Coolant Injection Isolation | | |
| 1. HPCI Steam Line Flow - High (E41-dPIS-N004 and E41-dPIS-N005) | $\leq$ 300% of rated flow | $\leq$ 300% of rated flow |
| 2. HPCI Steam Line High Flow Time Delay (E41-TDR-K43 and E41-TDR-K33) | 3 $\leq$ t $\leq$ 4 seconds | $\leq$ 12 sec. |
| 3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D) | $\geq$ 100 psig | $\geq$ 100 psig |
| 4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488 and E41-TS-3489) | $\leq$ 200°F | $\leq$ 200°F |
| 5. Bus Power Monitor (E41-K55 and E41-K56) | NA | NA |
| 6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D) | $\leq$ 10 psig | $\leq$ 10 psig |
| 7. HPCI Steam Line Ambient Temp - High (E51-TS-N603C,D) | $\leq$ 200°F | $\leq$ 200°F |
| 8. HPCI Steam Line Area $\Delta$ Temp - High (E51-dTS-N604C,D) | $\leq$ 50°F | $\leq$ 50°F |
| 9. Emergency Area Cooler Temp - High (E41-TS-N602A,B) | $\leq$ 175°F | $\leq$ 175°F |

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPONTS

| TRIP FUNCTION AND INSTRUMENT NUMBER | TRIP SETPOINT | ALLOWABLE VALUE |
|---|---|---|
| b. Reactor Core Isolation Cooling System Isolation | | |
| 1. RCIC Steam Line Flow - High (E51-dPIS-N017 and E51-dPIS-N018) | $\leq$ 300% of rated flow | $\leq$ 300% of rated flow |
| 2. RCIC Steam Line High Flow Time Delay (E51-TDR-K12 and E51-TDR-K32) | $3 \leq t \leq 4$ seconds | $\leq$ 12 sec. |
| 3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D) | $\geq$ 50 psig | $\geq$ 50 psig |
| 4. RCIC Steam Line Tunnel Temp - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355 and E51-TS-3487) | $\leq$ 175°F | $\leq$ 175°F |
| 5. Bus Power Monitor (E51-K42 and E51-K43) | NA | NA |
| 6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D) | $\leq$ 10 psig | $\leq$ 10 psig |
| 7. RCIC Steam Line Ambient Temp - High (E51-TS-N603A,B) | $\leq$ 200°F | $\leq$ 200°F |
| 8. RCIC Steam Line Area $\Delta$ Temp - High (E51-dTS-N604A,B) | $\leq$ 50°F | $\leq$ 50°F |
| 9. RCIC Equipment Room Ambient Temp - High (E51-TS-N602A,B) | $\leq$ 175°F | $\leq$ 175°F |
| 10. RCIC Equipment Room $\Delta$ Temp - High (E51-dTS-N601A,B) | $\leq$ 50°F | $\leq$ 50°F |

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM RESPONSE TIME

| TRIP FUNCTION AND INSTRUMENT NUMBER | RESPONSE TIME (Seconds) |
|---|---|
| 3. REACTOR WATER CLEANUP SYSTEM ISOLATION | |
| a. Δ Flow - High (G31-dFS-N603-1A,1B) | ≤13 |
| b. Area Temperature - High (G31-TS-N600 A,B,C,D,E,F) | ≤13 |
| c. Area Ventilation Temperature ΔT - High (G31-TS-N602A,B,C,D,E,F) | ≤13 |
| d. SLCS Initiation (C41A-S1) | NA |
| e. Reactor Vessel Water - Low, Level #2 (B21-LIS-N024A,B and B21-LIS-N025A,B) | ≤1.0** |
| 4. CORE STANDBY COOLING SYSTEMS ISOLATION | |
| a. High Pressure Coolant Injection Isolation | |
| 1. HPCI Steam Line Flow - High (E41-dPIS-N004 and E41-dPIS-N005) | ≤13*** |
| 2. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D) | ≤13 |
| 3. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488 and E41-TS-3489) | ≤13 |
| 4. Bus Power Monitor (E41-K55 and E41-K56) | NA |
| 5. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D) | NA |
| 6. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D) | NA |
| 7. HPCI Steam Line Area Δ Temp - High (E51-dTS-N604C,D) | NA |
| 8. Emergency Area Cooler Temperature - High (E41-TS-602A,B) | NA |

** Isolation actuation instrumentation response time only.
***Includes time delay provided by time delay relays E41-TDR-K33 and E41-TDR-K43.

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM RESPONSE TIME

| TRIP FUNCTION AND INSTRUMENT NUMBER | RESPONSE TIME (Seconds) |
|---|---|
| b. Reactor Core Isolation Cooling System Isolation | |
| 1. RCIC Steam Line Flow - High (E51-dPIS-N017 and E51-dPIS-N018) | $\leq$13 sec.**** |
| 2. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D) | NA |
| 3. RCIC Steam Line Tunnel Temp - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355 and E51-TS-3487) | NA |
| 4. Bus Power Monitor (E51-K42 and E51-K43) | NA |
| 5. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D) | NA |
| 6. RCIC Steam Line Ambient Temperature - High (E51-TS-N603A,B) | NA |
| 7. RCIC Steam Line Area $\Delta$ Temp - High (E51-dTS-N604A,B) | NA |
| 8. Emergency Area Cooler Temperature - High (E51-TS-N602A,B) | NA |
| 9. RCIC Equipment Room $\Delta$ Temp - High (E51-dTS-N601A,B) | NA |
| 5. SHUTDOWN COOLING SYSTEM ISOLATION | |
| a. Reactor Vessel Water Level - Low, Level #1 (B21-LIS-N017A,B,C,D) | NA |
| b. Reactor Steam Dome Pressure - High (B32-PS-N018A,B) | NA |

****Includes time delay provided by time delay relays E51-TDR-K12 and E51-TDR-K32.

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| TRIP FUNCTION AND INSTRUMENT NUMBER | CHANNEL CHECK | CHANNEL FUNCTIONAL TEST | CHANNEL CALIBRATION | OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED |
|---|---|---|---|---|
| 4. CORE STANDBY COOLING SYSTEMS ISOLATION | | | | |
| a. High Pressure Coolant Injection Isolation | | | | |
| 1. HPCI Steamline Flow - High (E41-dPIS-N004 and E41-dPIS-N005) | D | M | Q | 1, 2, 3 |
| 2. HPCI Steam Line High Flow Time Delay (E41-TDR-K43 and E41-TDR-K33) | NA | M | Q | 1, 2, 3 |
| 3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D) | NA | M | R | 1, 2, 3 |
| 4. HPCI Steamline Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488 and E41-TS-3489) | NA | M | Q | 1, 2, 3 |
| 5. Bus Power Monitor (E41-K55 and E41-K56) | NA | R | NA | 1, 2, 3 |
| 6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D) | NA | M | Q | 1, 2, 3 |
| 7. HPCI Steam Line Ambient Temp - High (E51-TS-N603C,D) | NA | M | R | 1, 2, 3 |
| 8. HPCI Steam Line Area Δ Temp - High (E51-dTS-N604C,D) | NA | M | R | 1, 2, 3 |
| 9. Emergency Area Cooler Temp - High (E41-TS-N602A,B) | NA | M | Q | 1, 2, 3 |

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| TRIP FUNCTION AND INSTRUMENT NUMBER | CHANNEL CHECK | CHANNEL FUNCTIONAL TEST | CHANNEL CALIBRATION | OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED |
|---|---|---|---|---|
| b. Reactor Core Isolation Cooling System Isolation | | | | |
| 1. RCIC Steamline Flow - High (E51-dPIS-N017 and E51-dPIS-N018) | NA | M | Q | 1, 2, 3 |
| 2. RCIC Steam Line High Flow Time Delay (E51-TDR-K12 and E51-TDR-K32) | NA | M | Q | 1, 2, 3 |
| 3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D) | NA | M | Q | 1, 2, 3 |
| 4. RCIC Steamline Tunnel High Temperature (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355 and E51-TS-3487) | NA | M | R | 1, 2, 3 |
| 5. Bus Power Monitor (E51-K42 and E51-K43) | NA | R | NA | 1, 2, 3 |
| 6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D) | NA | M | R | 1, 2, 3 |
| 7. RCIC Steam Line Ambient Temp - High (E51-TS-N603A,B) | NA | M | R | 1, 2, 3 |
| 8. RCIC Steam Line Area Δ Temp - High (E51-dTS-N604A,B) | NA | M | R | 1, 2, 3 |
| 9. RCIC Equipment Room Ambient Temp - High (E51-TS-N602A,B) | NA | M | Q | 1, 2, 3 |
| 10. RCIC Equipment Room Δ Temp - High (E51-dTS-N601A,B) | NA | M | Q | 1, 2, 3 |