

CROSS REFERENCE:

3.b: Control Board Operations – Understanding

SCENARIO/EVENT:

Scenario 3, Event 5: Main Turbine EHC Pump Tripped and Standby Pump Failed to Auto Start

EXPECTED ACTION/RESPONSE:

The applicant, as UO, was expected to recognize that the running EHC pump had tripped, respond initially in accordance with ALB33-B07 489V SWGR 1NB02 TROUBLE alarm to diagnose the pump failure and then provide input to the SRO as to the status of the standby pump and when it would auto start.

APPLICANT ACTION/RESPONSE:

The applicant identified the failure of the running EHC pump. The applicant failed to supply any additional information to the SRO or correct the SRO when he identified that the standby EHC pump failed to start. Prior to receiving ALB20-D05 HYD FLUID LO PRESS alarm, the SRO directed the standby EHC pump to be started. The applicant failed to recognize that this annunciator response procedure provided information as to when the low pressure alarm is received (1600 psig) and when the standby EHC will receive an automatic start (1400 psig). The applicant also failed to provide detailed information as to the rate of EHC pressure decrease to ensure that the SRO realized that it would take several minutes to receive the low pressure alarm and then several more minutes prior to an auto start on the standby EHC pump. The applicant was downgraded in this competency because he failed to understand the provide accurate EHC pressure information or identify the low pressure or auto start pressure setpoints for the standby EHC pump.

The applicant made only one error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in his ability to deliver accurate EHC pressure data and annunciator procedure information for the SRO to adequately diagnosis plant conditions.

(T)

Glomier Bates

CROSS REFERENCE:

1.b: Interpretation/Diagnosis – Ensure Accuracy

SCENARIO/EVENT:

Scenario 3, Event 7: DBA Steam Generator Tube Rupture on SG #1

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to direct low steam line pressure SI/SLI to be blocked when pressurizer pressure was less than 2000 psig, as indicated by the P-11 status lights, in accordance with procedure 19030-C, "E-3 Steam Generator Tube Rupture," Step 12.

APPLICANT ACTION/RESPONSE:

The applicant directed the Reactor Operator (RO) to block SI/SLI when pressurizer pressure was approximately 2007 psig, but his actions were not successful. At the time the applicant gave this initial direction to block SI/SLI, the P-11 status lights also indicated that blocking of SI/SLI would not be successful. A few minutes elapsed and the RO successfully blocked SI/SLI. After the scenario, the applicant was asked to explain why blocking SI/SLI was not initially successful. The applicant stated that she thought pressurizer pressure was 1998 psig. She stated that P-11 must not have been at that same point. The SRO was downgraded in this competency because she did not ensure the appropriate interlock was met (pressurizer pressure below 2000 psig) when first attempting to block SI/SLI.

The applicant made two non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in her ability to ensure the collection of correct and accurate pressurizer pressure data.

POTENTIAL CONSEQUENCES:

The potential consequences of this error are related to an operator's ability to obtain accurate and complete information on which to base a diagnosis and subsequent operator actions that result from that diagnosis. Potential consequences may include challenges to coordinating multiple control room activities that must occur within a short period of time. This was demonstrated during the scenario when the RO was required to hold both HS-0500A and HS-0500B handswitches in BYPASS INTERLOCK at the same time SI/SLI was required to be blocked. An accurate initial diagnosis would have been conducive to providing clear direction to both board operators to accomplish both actions in a more controlled manner, thereby reducing the potential for human error during control board manipulations.

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APPLICANT DOCKET NUMBER [REDACTED]

T

K/A (SRO IMPORTANCE RATING): 006A4.09 (4.2)

10CFR55.45(a)(4): Identify the instrumentation systems and the significance of facility instrument readings.

CROSS REFERENCE:

3.b: Control Board Operation – Understanding

SCENARIO/EVENT:

Scenario 3, Event 7: DBA Steam Generator Tube Rupture on SG #1

EXPECTED ACTION/RESPONSE:

The applicant, as Reactor Operator (RO), was expected to block the low steam line pressure SI/SLI when pressurizer pressure was less than 2000 psig as indicated by the P-11 status lights in accordance with procedure 19030-C, "E-3 Steam Generator Tube Rupture," Step 12.

APPLICANT ACTION/RESPONSE:

The applicant was directed by the Senior Reactor Operator (SRO) to block SI/SLI at approximately 2007 psig when pressurizer pressure was still above the required interlock setpoint of ~ 2000 psig. The applicant attempted to block SI/SLI but was not successful. At the time the SRO gave the direction to block SI/SLI, the P-11 status light was lit, indicating that SI/SLI could not be blocked. The applicant failed to recognize that the P-11 status light provided another mechanism to verify if the interlock condition was met to block SI/SLI. A few minutes later, the applicant successfully blocked SI/SLI. The applicant was downgraded in this competency because he did not verify or provide feedback to the SRO that pressurizer pressure was above 2000 psig when first attempting to block SI/SLI.

The applicant made two non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in his understanding of system operation and interlocks that allow operation of the SI/SLI block.

CROSS REFERENCE:

1.c: Interpretation/Diagnosis – Understanding

SCENARIO/EVENT:

Scenario 6, Event 4: Controlling Pressurizer Level Transmitter (LT-459) Failed Low

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to understand the impact of the LT-459 failure on charging flow and direct the crew to place the charging flow controller, FIC-0121, to manual prior to selecting an unaffected pressurizer level channel in accordance with procedure 18001-C, Section D, Failure of Pressurizer Level Instrumentation. Placing FIC-0121 to manual was necessary to avoid a rapid lowering of charging flow because pressurizer level had been above setpoint for several minutes due to the LT-459 failure, thereby causing the controller output signal (*i.e.* which would be "saturated") to demand less charging flow. It was expected that FIC-0121 remain in manual until the controller output signal would maintain charging flow at an acceptable level (*i.e.* until the controller "unsaturated"). Placing it back to automatic too soon would result in a rapid lowering of charging flow.

APPLICANT ACTION/RESPONSE:

The applicant initially directed placing the charging flow controller to manual prior to selecting an unaffected pressurizer level channel. However, after the Reactor Operator (RO) selected an unaffected pressurizer level channel, the applicant directed the RO to place FIC-0121 back to automatic before the controller was able to control charging flow at a rate that would provide adequate flow through the regenerative heat exchanger. Subsequently, charging flow rapidly lowered, at which time the RO placed FIC-0121 back to manual. The Unit Operator (UO) informed the applicant that he believed that FIC-0121 was failed. After the scenario, the examiner asked the applicant if there was a problem with FIC-0121. The applicant stated that the charging control valve was closing and that it should not have closed because pressurizer level was on program. The applicant was downgraded in this competency because she did not understand that charging flow would lower due to the controller's response to a high pressurizer level over several minutes.

The applicant made two non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant displayed a weakness in understanding plant system and component interaction.

POTENTIAL CONSEQUENCES:

The potential consequences of this error include flashing of letdown line fluid from liquid to steam due to the loss of cooling caused by the loss of charging flow. Flashing of the letdown line could lead to loss of letdown inventory via the relief valves and "water hammer" damage to the letdown piping system.

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APPLICANT DOCKET NUMBER [REDACTED]

(T)

K/A (SRO IMPORTANCE RATING): 004K1.01 (4.0)

10CFR55.45(a)(2): Manipulate the console controls as required to operate the facility between shutdown and designated power levels.

Q

CROSS REFERENCE:

1.c: Interpretation/Diagnosis – Understanding

SCENARIO/EVENT:

Scenario 6, Event 4: Controlling Pressurizer Level Transmitter (LT-459) Failed Low

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to direct the crew to place the charging flow controller, FIC-0121, to manual prior to selecting an unaffected pressurizer level channel in accordance with procedure 18001-C, Section D, Failure of Pressurizer Level Instrumentation. Placing the charging flow controller to manual was necessary to avoid a total loss of charging because pressurizer level had been above setpoint for several minutes due to the LT-459 failure.

APPLICANT ACTION/RESPONSE:

The applicant did not direct placing the charging flow controller to manual prior to selecting an unaffected pressurizer level channel. Immediately after the applicant directed the RO to select an unaffected pressurizer level channel, charging flow rapidly lowered, at which time the applicant directed the Reactor Operator (RO) to place the charging flow controller back to manual. The crew discussed the plant response and verbalized that they thought FIC-0121 had failed. The applicant was downgraded in this competency because he did not understand that selecting an unaffected pressurizer level channel would cause charging flow to lower due to the controller's response to a high pressurizer level over several minutes.

The applicant made three non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in understanding how plant systems and components interact.

CROSS REFERENCE:

1.c: Interpretation/Diagnosis – Understanding

SCENARIO/EVENT:

Scenario 6, Event 4: Controlling Pressurizer Level Transmitter (LT-459) Failed Low

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to understand the impact of the LT-459 failure on charging flow and direct the crew to place the charging flow controller, FIC-0121, to manual prior to selecting an unaffected pressurizer level channel in accordance with procedure 18001-C, Section D, Failure of Pressurizer Level Instrumentation. Placing the charging flow controller to manual was necessary to avoid a total loss of charging because pressurizer level had been above setpoint for several minutes due to the LT-459 failure.

APPLICANT ACTION/RESPONSE:

The applicant did not direct placing the charging flow controller to manual prior to selecting an unaffected pressurizer level channel. Immediately after the applicant directed the RO to select an unaffected pressurizer level channel, charging flow rapidly lowered, at which time the applicant directed the Reactor Operator (RO) to place FIC-0121 back to manual. The crew discussed the plant response and through their conversation it was determined that they fully understood the plant response. The SRO was downgraded in this competency because, at the time he provided direction to the RO to select an unaffected channel, he did not understand that charging flow would lower to zero due to selecting that unaffected pressurizer level channel.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in providing the proper amount of direction and oversight when the crew was selecting an unaffected pressurizer level channel.

CROSS REFERENCE:

3.c: Control Board Operations – Understanding

SCENARIO/EVENT:

Scenario 6, Event 4: Pressurizer (PRZR) Level Channel LT-459 Slowly Failed Low

EXPECTED ACTION/RESPONSE:

The applicant, as Reactor Operator (RO), was expected to correctly understand the operational implications of selecting an unaffected PRZR level channel with the charging controller in automatic. The applicant was also expected to correctly understand the impacts of "saturation" on the PRZR level control system/charging flow controller when returning the charging flow controller (FIC-121) to automatic operation.

APPLICANT ACTION/RESPONSE:

At the direction of the Senior Reactor Operator (SRO), the applicant selected an unaffected PRZR level channel on LS-459D in accordance with AOP 18001-C. When the unaffected channel was selected, charging flow rapidly lowered due to the charging controller sensing actual PRZR levels greater than program. At this point, the applicant was directed by the SRO to take manual control of charging and restore charging to approximately 130 gpm (the previous value). The applicant was then directed by the SRO to return FIC-121 to automatic after approximately 7 minutes in manual. When the applicant agreed with the SRO and placed FIC-121 to auto, the valve -121 again went closed, again charging flow rapidly lowered, but the applicant was able to go back to manual on FIC-121 and re-open the valve before letdown had to be isolated. The applicant then stated that he believed that there was a failure in FIC-121.

During post-scenario follow-up questions, the applicant correctly stated that on the initial transient, the team did not discuss the effects of selecting a good channel and did not anticipate the plant response. The applicant further stated (incorrectly) that the team determined there was an additional problem with the FIC-121 controller. The applicant made two non-critical errors associated with this rating factor, and was therefore evaluated with a score of "1" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation (K/A G2.1.7).

CROSS REFERENCE:

1.b: Interpretation/Diagnosis - Interpret & Diagnose Conditions

SCENARIO/EVENT:

Scenario 6, Event 4: PRZR level channel LT-459 slowly failed low over 10 minutes. The RO was required to take manual control of FIC-0121 to stabilize charging flow and PRZR level, swap control channels, return charging flow to automatic.

EXPECTED ACTION/RESPONSE:

The applicant, as UO, was expected to assist in diagnosing LT-459 failing low and its affect on charging flow and PRZR level control. With the selected level input from LT-459 failed low, charging flow increased to maximum in an attempt to restore PRZR level. After the RO initially stabilized PRZR level and RCP seal flow by placing charging controller, FCV-0121, to manual and reducing flow to its normal value, the applicant, as UO, was expected to aid in diagnosing that the Master PRZR level controller should be placed in Manual prior to placing FCV-0121 back to AUTO. This action would ensure that the Master PRZR level controller had time to unsaturate. If this did not occur, the Master PRZR Level Controller would demand a much lower level after the RO selected a good level input via the PRZR LVL CNTL SELECT switch and cause a large decrease in charging flow. The large decrease in charging flow would cause flashing of letdown fluid to steam and require isolation of the letdown system.

APPLICANT ACTION/RESPONSE:

The applicant failed to assist in diagnosing LT-459 failing low and its affect on charging flow and PRZR level control and incorrectly informed the SRO that FCV-0121 failed to operate properly after being placed in AUTO by the RO. A subsequent loss of letdown due to flashing in the letdown heat exchanger was caused by the low charging flow condition.

The applicant made more than one error in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in her diagnosis of LT-459 failure and its affect on the charging flow controller and PRZR level control.

CROSS REFERENCE:

3.b.: Control Board Operations – Understanding

SCENARIO/EVENT:

Scenario 6, Event 4: Pressurizer (PRZR) Level Channel LT-459 Slowly Failed Low

EXPECTED ACTION/RESPONSE:

The applicant, as Reactor Operator (RO), was expected to correctly understand the impacts of "saturation" on the PRZR level control system/charging flow controller when returning the charging flow controller (FIC-121) to automatic operation.

APPLICANT ACTION/RESPONSE:

The applicant placed FIC-121 to manual in accordance with AOP 18001-C in order to mitigate the PRZR level channel failure. The applicant was then directed by the Senior Reactor Operator (SRO) to return FIC-121 to automatic after approximately 18 minutes in manual. When the applicant agreed with the SRO and placed FIC-121 to auto, the valve -121 went fully closed, charging flow rapidly lowered, and the REGEN HX LTDN HI TEMP alarm came in. Without further guidance from the SRO, the applicant went back to manual on FIC-121 and reopened the valve before letdown had to be isolated. The Unit Operator (UO) restored RCP seal injection flow rates while the applicant restored charging flow.

During post-scenario follow-up questions, the applicant incorrectly stated that he thought there was an issue with FIC-121. He further stated that when he returned FIC-121 to automatic "pressurizer level and program level were matched, but then demand on the controller went from sixty to seventy-five percent to twenty-five percent immediately, which drove charging and [RCP] seal flows down." The applicant made one non-critical error associated with this rating factor, and was therefore evaluated with a score of "2" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.

CROSS REFERENCE:

1.d: Interpretation/Diagnosis – Diagnose

SCENARIO/EVENT:

Scenario 6, Event 6: Power Reduction Due to High Vibrations on "B" MFPT

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to monitor valid indications of Tave and compare to Tref values in order to effectively monitor automatic control rod insertion during the power reduction. Procedure 18013-C, "Rapid Power Reduction," provides guidance to monitor Tave/Tref deviation using IPC computer point UT-0495; however, this indication was not accurate due to the Loop 1 HL NR RTD failing earlier in the scenario. With UT-0495 not being accurate, the applicant was expected to choose a valid indication of Tave and compare that to program Tref. Based on the Tave/Tref deviation the SRO was expected to ensure automatic control rod insertion was responding appropriately.

APPLICANT ACTION/RESPONSE:

The applicant monitored points UT-0420 and UT-0496 to evaluate correct response of the rod control system. During the initial portion of the power reduction, Tave was lower than Tref. With Tave approximately 2 °F lower than Tref, the applicant directed the Reactor Operator (RO) to take manual control of rods and insert control rods 5 steps. The RO recommended not initially placing rods to manual, and suggested continued monitoring and inserting rods in manual if they do not move as required. The applicant agreed with this suggestion. Shortly thereafter, the RO informed the applicant that he was taking rods to manual and inserting control rods 5 steps (Tave was still approximately 2 °F lower than Tref and rods are not designed to step in when Tave is lower than Tref). The SRO agreed with the control rod insertion. The RO began to insert control rods 5 more steps and the applicant stated "no - Tave was already cold." Shortly thereafter, ALB12-A5, TAVE/TREF DEVIATION, alarmed. After the scenario, the applicant was asked why she had directed placing rods to manual. She stated that placing rods in manual was a bad idea. The examiner also asked which temperature indications she was monitoring. She stated that the normal average temperature indication was impacted by the HL RTD failure so she chose the lowest of the loop Tave values. The applicant was downgraded in this competency because she incorrectly directed control rods be placed in manual and then directed rod insertion when Tave was lower than Tref, which resulted in the TAVE/TREF DEVIATION alarm.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in her ability to correctly diagnose the Tave-to-Tref deviation, which caused her to instruct the RO to manually insert control rods to the point where the TAVE/TREF DEVIATION alarm was received.

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APPLICANT DOCKET NUMBER [REDACTED]

(T)

POTENTIAL CONSEQUENCES:

The potential consequences of this error included placing control rods to manual based on an incorrect diagnosis that automatic control rod insertion was not functioning properly. In this case, the incorrect diagnosis placed an additional burden on the operator to manually insert control rods.

K/A (SRO IMPORTANCE RATING): 001A3.06 (3.9)

10CFR55.45(a)(3): Identify annunciators and condition-indicating signals and perform appropriate remedial actions where appropriate.

**CROSS REFERENCE:**

1.c: Interpretation/Diagnosis – Understanding

SCENARIO/EVENT:

Scenario 6, Events 2 & 6: RCS Loop 1 HL NR RTD Failed High & Power Reduction due to "B" MFPT High Vibrations

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to direct the crew to monitor proper automatic control rod response during the power reduction. In part, the applicant was expected to understand how the Loop 1 HL NR RTD failure earlier in the scenario would affect UT-0495, which was the computer point operators were directed to use by procedure 18013-C, "Rapid Power Reduction." The applicant was expected to monitor proper automatic control rod insertion using indications that were impacting the rod control system. The applicant was not expected to use UT-0495 to evaluate proper automatic control rod insertion because it was not an accurate indication due to the previous failure.

APPLICANT ACTION/RESPONSE:

The applicant and the other crew members were monitoring Tave/Tref deviations using UT-0495 for the first few minutes of the power reduction. The crew discussed that control rods should be inserting due to Tave being more than 3 °F above Tref. Shortly after that conversation began, control rods began to step into the core to lower Tave. After the scenario, the applicant was asked to explain the temperature indications that were being monitored during the power reduction. The applicant stated that they were incorrectly using UT-0495. He stated that UT-0495 was not an accurate indication due to the earlier Loop 1 NR RTD failure. The applicant was downgrade in this competency because he exhibited a weakness in understanding how the earlier RTD failure impacted his ability to accurately monitor automatic rod control.

The applicant made three non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in understanding how plant systems and components interact.

**CROSS REFERENCE:**

3.c.: Control Board Operations – Manual Control

SCENARIO/EVENT:

Scenario 6, Event 6: 'B' Main Feed Pump Turbine (MFPT) Experienced High Vibrations, Rapid Power Reduction Required

EXPECTED ACTION/RESPONSE:

If directed by the Senior Reactor Operator (SRO) to control average Reactor Coolant System (RCS) temperature (Tave) with control rods in manual, the applicant, as Reactor Operator (RO), was expected to correctly control Tave-to-reference temperature (Tref) approximately matched, and within procedurally directed bands. Procedure 18013-C, "Rapid Power Reduction," requires the operators to maintain Tave within 6 °F of Tref. It was expected that the applicant would maintain the Tave-to-Tref difference approximately matched, or slightly negative, during the rapid downpower.

APPLICANT ACTION/RESPONSE:

Although 18013-C directs the operators to maintain rods in automatic, the applicant was directed by the SRO to "place control rods in manual and insert up to 5 steps at a time." After the applicant placed rods to manual, he performed a 3 step rod insertion. At this time, Tave was approximately 2.0 °F colder than Tref, but the applicant was mis-reading the Tave-to-Tref difference as Tave being 2.0 °F hotter than Tref. Approximately one minute after the first rod insertion, the applicant performed a 5 step rod insertion, making the deviation worse. Tave continued to lower until it was approximately 5.2 °F colder than Tref. At this point, the applicant became concerned about pressurizer level lowering (due to the lowering Tave) and announced to the SRO that "we're at max charging and pressurizer level is 46%!" Several minutes later, the SRO ultimately determined that they had been mis-reading the Tave-to-Tref difference and gave direction to return rod control to automatic. After the applicant returned rods to automatic, the rod control system responded as designed during the remaining power reduction.

During post-scenario follow-up questions, the applicant stated that when the SRO "put Tave and Tref on the [computer] screen I thought we were greater than 1.5 degrees off, but what I actually did was [incorrectly calculate] absolute value. Driving rods in caused Tave to go the other way, once we took rods to auto the rods stepped in as required." The applicant made one non-critical error associated with this rating factor, and was therefore evaluated with a score of "2" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.

**CROSS REFERENCE:**

3.a: Control Board Operations – Locate & Manipulate

SCENARIO/EVENT:

Scenario 7, Event 1: Raise Power in Accordance With 12004-C, Power Operation (Mode 1)

EXPECTED ACTION/RESPONSE:

The applicant, as Reactor Operator (RO), was expected to make the required reactivity adjustments to maintain Tave within 2°F of Tref during a power ascension from 29%.

APPLICANT ACTION/RESPONSE:

Prior to commencing the power ascension, the Senior Reactor Operator (SRO) directed the applicant to maintain Tave within 2°F of Tref. However, the applicant allowed Tave to drop approximately 2.3 °F below Tref after the power ascension was suspended. Tave trended downward for approximately 40 minutes before reaching the maximum deviation of 2.3 °F, at which time the applicant withdrew control rods and brought Tave back within the directed control band. After the scenario, the applicant was asked to state the Tave/Tref control band provided by the SRO. The applicant stated 2 °F. The applicant was also asked to state the maximum difference between Tave and Tref prior to the reactor trip. The applicant stated 2.3 °F. The applicant was downgraded in this competency because her reactivity manipulations were not timely enough to maintain the control band provided by the SRO.

The applicant made three non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in her ability to make timely reactivity changes to maintain Tave within 2 °F of Tref as directed by the SRO.

POTENTIAL CONSEQUENCES:

The potential consequences of not maintaining parameters within control bands directed by the SRO could result in alarms and unnecessary operator actions that could distract the operator.

K/A (SRO IMPORTANCE RATING): 001A4.03 (3.7)

10CFR55.45(a)(3): Identify annunciators and condition-indicating signals and perform appropriate remedial actions where appropriate.

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APPLICANT DOCKET NUMBER [REDACTED]

Examiner: Bates

CROSS REFERENCE:

3.a: Control Board Operations – Locate & Manipulate

SCENARIO/EVENT:

Scenario 7, Event 1: Raise Power per UOP-12004-C, Power Operation (Mode 1)

EXPECTED ACTION/RESPONSE:

The applicant, as Reactor Operator (RO), was expected to maintain Tave within 2 °F of Tref as determined by turbine first stage pressure and as directed by the Senior Reactor Operator (SRO). The applicant was expected to use a combination of dilutions and control rods to maintain Tave within the provided band.

APPLICANT ACTION/RESPONSE:

The applicant allowed Tave to deviate from Tref by 2.6 °F during the controlled power increase as determined by turbine first stage pressure. After the scenario, the applicant was asked to explain his temperature control as power was raised. He stated that he was using a Tref value from a table on the control board using a core delta-T power to determine the corresponding value for Tref.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in his ability to accurately manipulate controls to maintain Tave within the band directed by the SRO.

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CROSS REFERENCE:

5.b: Directing Operations – Oversight

SCENARIO/EVENT:

Scenario 7, Event 1: Raise Power in accordance with 12004-C, Power Operation (Mode 1)

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to remain in a position of oversight in order to ensure the Reactor Operator (RO) made the required reactivity adjustments to maintain Tave within 2°F of Tref during a power ascension from 29%.

APPLICANT ACTION/RESPONSE:

Prior to commencing the power ascension, the applicant directed the RO to maintain Tave within 2°F of Tref. However, Tave lowered to approximately 2.3 °F below Tref after the power ascension was suspended. Tave trended downward for approximately 40 minutes before reaching the maximum deviation of 2.3 °F, at which time the RO withdrew control rods and restored Tave back within the directed control band. During this 40 minute period, the applicant did not notice that Tave was trending out of the directed band, and did not provide further guidance to the RO to correct the condition.

The applicant made one non-critical error associated with this rating factor, and was therefore evaluated with a score of "2" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of ability to direct personnel activities in the control room.



Examiner: Bates

CROSS REFERENCE:

3.a: Control Board Operations – Locate & Manipulate

SCENARIO/EVENT:

Scenario 7, Event 6: RWST Sludge Mixing Line Pipe Break with Failure to Automatically Isolate

EXPECTED ACTION/RESPONSE:

The applicant, as Reactor Operator (RO), was expected to know the location of the RWST sludge mixing isolation valves' (1-LT-0991 & 1-LT-0990) handswitches, which were located on the control room back panel QPCP. As a result, the applicant was expected to assist the crew in locating and closing the sludge mixing isolation valves in a timely manner following annunciation of ALB06-E04, RWST LO LEVEL. The applicant was the RO, therefore, it was not expected that she leave her control boards to close the valves. However, it was expected that she recommend to the crew that those valves were located in the control room (and also modeled in the simulator) and that the automatic actions for those valves to close on low RWST level needed to be ensured.

APPLICANT ACTION/RESPONSE:

After receipt of ALB06-E04, the applicant did not recommend to the crew that they needed to ensure that the sludge mixing isolation valves, were closed. During this event the Unit Operator (UO) stated to the applicant that the sludge mixing valves should have closed on low RWST level, but the applicant did not recommend that the crew ensure that those control room handswitches be checked closed. The entire crew, including the applicant, allowed the RWST leak to continue for approximately 19 minutes when the only action required to isolate the leak was closing the control room handswitches for the sludge mixing isolation valves, which should have been verified closed as part of performing the alarm response procedure associated with ALB06-E04.

The applicant made three non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in locating the sludge mixing isolation valves' handswitches.

POTENTIAL CONSEQUENCES:

The potential consequences of not closing sludge mixing isolation valves was a reduction in RWST inventory available to cool the core following a safety injection, including a potential inability to achieve cold leg recirculation due to the depletion of RWST inventory.

K/A (SRO IMPORTANCE RATING): 006K4.24 (3.0)

10CFR55.45(a)(3): Identify annunciators and condition-indicating signals and perform appropriate remedial actions where appropriate.

CROSS REFERENCE:

3.a: Control Board Operations – Locate & Manipulate

SCENARIO/EVENT:

Scenario 7, Event 6: RWST Sludge Mixing Line Pipe Break with Auto Valve Closure Failure

EXPECTED ACTION/RESPONSE:

The applicant, as Reactor Operator (RO), was expected to ensure that the crew closed the sludge mixing isolation valves when ALB06-E04, RWST LO LEVEL, was received.

APPLICANT ACTION/RESPONSE:

The applicant allowed 11 minutes to elapse from the time the RWST LO LEVEL alarm annunciated to the time when the sludge mixing isolation valves were closed. This malfunction was originally designed for the Unit Operator (UO) to address the alarm; however, such a long time elapsed that all crew members had the opportunity to view the ARP and provide input to successfully isolate the leak by closing the isolation valves, both of which were located in the control room. After the scenario, the applicant was asked if he had ever been exposed to this failure during training or if he had ever had to operate those valves either in the plant or in the simulator. The applicant stated that he had not previously operated those valves and did not initially know where they were located. The applicant was downgraded in this competency due to not knowing the location of the sludge mixing isolation valves.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in his ability to locate the sludge mixing isolation valves in the control room.

CROSS REFERENCE:

3.a: Control Board Operations – Locate & Manipulate

SCENARIO/EVENT:

Scenario 7, Event 6: RWST Sludge Mixing Line Pipe Break With Failure to Automatically Isolate

EXPECTED ACTION/RESPONSE:

The applicant, as UO, was expected to respond to a RWST Low Level Alarm in accordance with alarm response procedure ALB06-E04, recognize that the automatic action for the RWST Sludge Mixing Tank did not occur and take manual action to shut the RWST Sludge Mixing Isolation Valve(s) on the QPCP.

APPLICANT ACTION/RESPONSE:

The applicant pulled the associated alarm response procedure for ALB06-E04 but failed to recognize that the associated valves listed to close as an automatic action were located in the Control Room on the QPCP. The entire crew, including the applicant, allowed the RWST leak to continue for approximately 11 minutes when the only action required to isolate the leak was closing the sludge mixing isolation valves, which should have been verified closed as part of performing the alarm response procedure associated with ALB06-E04. On a follow-up question, the applicant identified that he was not sure if the valves were located in the control room.

The applicant made one error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in locating the sludge mixing isolation valves.

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APPLICANT DOCKET NUMBER [REDACTED]

Examined by: ~~Butts~~
Capehart

(N)

CROSS REFERENCE:

2.b: Procedures/Tech Specs – Procedure Compliance

SCENARIO/EVENT:

Scenario 7, Event 6: RWST Sludge Mixing Line Pipe Break With Failure to Automatically Isolate

EXPECTED ACTION/RESPONSE:

The applicant, as Unit Operator (UO), was expected to respond to an RWST Low Level Alarm in accordance with alarm response procedure ALB06-E04, recognize that the automatic action for the RWST Sludge Mixing Tank did not occur, and take manual action to shut the RWST Sludge Mixing Isolation Valve(s) on the QPCP.

APPLICANT ACTION/RESPONSE:

The applicant pulled the associated alarm response procedure for ALB06-E04 but failed to recognize that the associated valves listed to close as an automatic action were located in the Control Room on the QPCP. The entire crew, including the applicant, allowed the RWST leak to continue for approximately 19 minutes when the only action required to isolate the leak was closing the sludge mixing isolation valves, which should have been verified closed as part of performing the alarm response procedure associated with ALB06-E04.

Later, the Senior Reactor Operator (SRO) directed the UO to review the SI OP (Operation Procedure), 131050-1, for guidance steps on how to secure the RWST Sludge Mixing Tank System. The UO reviewed procedure 131050-1, Rev. 52, section 4.2.7 for "Operating the RWST Sludge Mixing System" and incorrectly informed the SS that the SI OP did not give any direction for isolating the sludge mixing tank. In fact, procedure 13105-1, Steps 4.2.7.3 – 4.2.7.5, gave direction to stop the sludge mixing pump and then close the sludge mixing isolation valves.

The SRO identified that the valves were located on the QPCP by using the P&ID prints and informed the UO to secure the isolation valves. The UO at that time closed the sludge mixing tank valves at the QPCP. Subsequently, the sludge mixing tank pump automatically tripped. The UO failed to recognize that the steps for isolating the RWST Sludge Mixing Tank were in the SI OP procedure.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in locating the appropriate SI OPS procedure section for isolating the sludge mixing tank system.

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APPLICANT DOCKET NUMBER [REDACTED]

Ex 10

Examiner: Meeks

(U)

CROSS REFERENCE:

1.c: Interpretation/Diagnosis – Understanding

SCENARIO/EVENT:

Scenario 7, Event 6: The Refueling Water Storage Tank (RWST) Developed a Leak With RWST Sludge Mixing Isolation Valves Failed to Automatically Close

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to understand that the RWST sludge mixing valves should automatically close on a RWST LO LEVEL alarm, and ensure that the operators verify that the expected automatic actions do, in fact, occur.

APPLICANT ACTION/RESPONSE:

When the RWST LO LEVEL alarm annunciated, the applicant directed the ARP to be referenced and actions taken. The applicant verified that RWST levels were actually lowering on all channels and dispatched non-licensed operators to the area to investigate the problem. However, the entire crew (including the applicant) allowed the RWST leak to continue for approximately 11 minutes before they isolated the leak by manually closing the RWST sludge mixing isolation valves (1-LT-0991 and 1-LT-0990) using handswitches on the control room back-panel QPCP. The applicant ultimately determined that the valves had switches in the control room after referencing a piping diagram.

During post-scenario follow-up questions, the applicant stated that he did not initially think to check the RWST valves closed as part of verifying the automatic actions of the RWST LO LEVEL alarm response procedure because he was not sure they were in the control room. The applicant made one non-critical error associated with this rating factor, and was therefore evaluated with a score of "2" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of knowledge of annunciator alarms, indications, or response procedures; as well as a lack of ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup.

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CROSS REFERENCE:

1.c: Interpretation/Diagnosis – Understanding

SCENARIO/EVENT:

Scenario 7, Event 6: The Refueling Water Storage Tank (RWST) Developed a Leak With RWST Sludge Mixing Isolation Valves Failed to Automatically Close

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to understand that the RWST sludge mixing valves should automatically close on a RWST LO LEVEL alarm, and ensure that the operators verify that the expected automatic actions do, in fact, occur.

APPLICANT ACTION/RESPONSE:

When the RWST LO LEVEL alarm annunciated, the applicant directed the ARP to be referenced and actions taken. The applicant verified that RWST levels were actually lowering on all channels and dispatched non-licensed operators to the area to investigate the problem. However, the entire crew (including the applicant) allowed the RWST leak to continue for approximately 19 minutes before they isolated the leak by manually closing the RWST sludge mixing isolation valves (1-LT-0991 and 1-LT-0990) using handswitches on the control room back-panel QPCP.

During post-scenario follow-up questions, the applicant stated that he did not initially think to check the RWST valves closed as part of verifying the automatic actions of the RWST LO LEVEL alarm response procedure. The applicant made two non-critical errors associated with this rating factor, and was therefore evaluated with a score of "1" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of knowledge of annunciator alarms, indications, or response procedures; as well as a lack of ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup.

CROSS REFERENCE:

3.c: Control Board Operations – Manual Control

SCENARIO/EVENT:

Scenario 7, Event 3: Loss of Cooling to Letdown Heat Exchanger (TE-0130 Failed Low)

EXPECTED ACTION/RESPONSE:

The applicant, as Reactor Operator (RO), was expected to diagnose the failure of TE-0130, Letdown Heat Exchanger Outlet Temperature, and manually control TV-0130 using controller 1TIC-130, LETDOWN HX OUTLET TEMP.

APPLICANT ACTION/RESPONSE:

When TE-0130 failed low, the applicant acknowledged the associated alarms (ALB07-F04 & ALB07-B04), but did not take any actions to manually control letdown temperature, and also did not recommend to the Senior Reactor Operator (SRO) that she could manually control letdown temperature. Approximately seven minutes after the first alarm annunciated, the applicant made the statement, "The only thing we can do is call C&T [Clearance & Tagging] to get the TE fixed." Approximately one minute later, the SRO directed the applicant to take manual control of 1TIC-130 and monitor the VCT outlet temperature. When the applicant began manipulating 1TIC-130, she initially pressed the up arrow, and the SRO immediately informed her that the controller raises and lowers temperature and that the arrows are not indicative of opening and closing the valve. After the incorrect manipulation and specific direction from the SRO, the applicant gained control of letdown temperature. After the scenario, the applicant was asked to explain her response to the malfunction. She stated that she initially pressed the up pushbutton, and then corrected her actions and pushed the down pushbutton.

The applicant had seven minutes to understand that the automatic function of controlling letdown temperature could be accomplished manually. Instead of making this recommendation to the SRO, she stated that the only option was to call C&T to get the TE repaired. Furthermore, she demonstrated a weakness in taking manual control of an automatic function by her incorrect manipulation of 1TIC-130. The applicant was downgraded in this competency due to not demonstrating the ability to manually control an automatic function.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in her ability to take manual control of an automatic function. Specifically, this was demonstrated by the applicant not taking manual control of letdown temperature or recommending manual control for approximately seven minutes before the SRO finally directed manual control. Furthermore, she demonstrated a weakness in ability to take manual control of an automatic function by incorrectly manipulating 1TIC-130 until being corrected by the SRO.

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APPLICANT DOCKET NUMBER [REDACTED]

(T)

POTENTIAL CONSEQUENCES:

The potential consequences of not correctly controlling letdown temperature include a challenge to the interlock that protects the demineralizers from high temperatures as well as reactivity effects resulting from letdown temperature changes.

K/A (SRO IMPORTANCE RATING): 006K4.24 (3.0)

10CFR55.45(a)(3): Identify annunciators and condition-indicating signals and perform appropriate remedial actions where appropriate.

CROSS REFERENCE:

3.b: Control Board Operations – Understanding

SCENARIO/EVENT:

Scenario 4, Event 3: PORV 456 Failed Open with Block Valve Auto Closure Failure

EXPECTED ACTION/RESPONSE:

The applicant, as Reactor Operator (RO), was expected to diagnose the failed open PORV and manually shut the associated block valve. There was not a malfunction associated with the automatic pressurizer pressure control; therefore, the applicant was expected to understand that once the block valve was closed, the automatic pressure control would slowly recover pressurizer pressure.

APPLICANT ACTION/RESPONSE:

The applicant incorrectly thought that the master pressurizer pressure controller would not control pressure due to being saturated, placed the controller in manual, and controlled pressure manually for the remainder of the scenario. The master pressure controller was recovering pressure at the time the applicant placed the controller to manual and no malfunctions were associated with the master pressure controller. After the scenario the applicant was asked if pressure could have been maintained adequately by leaving the master pressure controller in automatic. The applicant stated that the controller would not have maintained pressure if it remained in automatic.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in his understanding of the response of the automatic pressurizer pressure controller to a failed open PORV.

CROSS REFERENCE:

4.b: Communications – Crew & Others Informed

SCENARIO/EVENT:

Scenario 3, Event 1: Steam Generator (SG) #4 NR LT-554 Failed High

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to request the Shift Manager's permission prior to placing 1-FIC-540 (SG #4 FRV) back to automatic after selecting the unaffected SG level control channel. Procedure NMP-OS-007-001, Version 9.0, "Conduct of Operations Standards and Expectations," Step 6.29.2.1, states, in part, "When a system or component has been placed in manual due to a transient caused by an automatic control malfunction, SM permission is required prior to returning the system or component to automatic control following stabilization from the transient and correction of the malfunction."

APPLICANT ACTION/RESPONSE:

The applicant incorrectly directed the Unit Operator (UO) to place 1-FIC-540 back to automatic without first getting permission from the Shift Manager. After the applicant gave the direction to the UO, the Reactor Operator (RO) whispered to the applicant that she needed to get the Shift Manager's permission prior to going to automatic. The applicant then instructed the UO to wait to place 1-FIC-540 back to automatic until the Shift Manager's permission was obtained. The applicant obtained the Shift Manager's permission, and then correctly directed the UO to place 1-FIC-540 back to automatic. The applicant was downgraded due to not keeping the Shift Manager informed as required by NMP-OS-007-001. It was only the correction by the RO that allowed the communication requirement to be met.

The applicant made two non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in her ability to keep other crew members informed by not getting permission from the Shift Manager prior to placing 1-FIC-540 back to automatic.

POTENTIAL CONSEQUENCES:

The potential consequences of not keeping all crew members informed in accordance with plant administrative procedures is that incorrect decisions could be made, or a delay in actions or response could be incurred while that information is conveyed at a later time.

K/A (SRO IMPORTANCE RATING): G2.1.17 (4.0)

10CFR55.45(a)(13): Demonstrate the applicant's ability to function within the control room team as appropriate to the assigned position, in such a way that the facility licensee's procedures are adhered to and that the limitations in its license and amendments are not violated.

CROSS REFERENCE:

4.b: Communications – Crew & Others Informed

SCENARIO/EVENT:

Scenario 3, Event 4: Controlling Pressurizer Pressure Channel PT-455 Failed High

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to request the Shift Manager's permission prior to placing the pressurizer master pressure controller back to automatic following the selection of an unaffected pressurizer channel. Procedure NMP-OS-007-001, Version 9.0, "Conduct of Operations Standards and Expectations," Step 6.29.2.1, states, in part, "When a system or component has been placed in manual due to a transient caused by an automatic control malfunction, SM permission is required prior to returning the system or component to automatic control following stabilization from the transient and correction of the malfunction."

APPLICANT ACTION/RESPONSE:

The applicant incorrectly directed the Unit Operator (UO) to place the pressurizer master pressure controller back to automatic without first getting permission from the Shift Manager. The applicant was downgraded due to not keeping the Shift Manager informed as required by NMP-OS-007-001.

The applicant made two non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in her ability to keep other crew members informed by not getting permission from the Shift Manager prior to placing the pressurizer master pressure controller back to automatic.

POTENTIAL CONSEQUENCES:

The potential consequences of not keeping all crew members informed in accordance with plant administrative procedures is that incorrect decisions could be made, or a delay in actions or response could be incurred while that information is conveyed at a later time.

K/A (SRO IMPORTANCE RATING): G2.1.17 (4.0)

10CFR55.45(a)(13): Demonstrate the applicant's ability to function within the control room team as appropriate to the assigned position, in such a way that the facility licensee's procedures are adhered to and that the limitations in its license and amendments are not violated.

EXU

Examiner: Bates

CROSS REFERENCE:

4.b: Communications – Crew & Others Informed

SCENARIO/EVENT:

Scenario 6, Event 2: RCS Loop 1 HL NR RTD Failed High

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to request Shift Manager permission prior to placing control rods back to automatic after defeating the failed channel temperature channel. Procedure NMP-OS-007-001, Version 9.0, "Conduct of Operations Standards and Expectations," Step 6.29.2.1, states, in part, "When a system or component has been placed in manual due to a transient caused by an automatic control malfunction, SM permission is required prior to returning the system or component to automatic control following stabilization from the transient and correction of the malfunction."

APPLICANT ACTION/RESPONSE:

The applicant incorrectly directed the Reactor Operator (RO) to place control rods back to automatic without first getting permission from the Shift Manager.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in his ability to keep other crew members informed by not getting permission from the shift manager prior to placing control rods back to automatic.

CROSS REFERENCE:

4.b: Communications – Crew & Others Informed

SCENARIO/EVENT:

Scenario 6, Event 2: RCP Loop 1 HL NR RTD Failed High

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to request Shift Manager permission prior to placing control rods back to automatic after defeating the failed temperature channel. Procedure NMP-OS-007-001, Version 9.0, "Conduct of Operations Standards and Expectations," Step 6.29.2.1, states, in part, "When a system or component has been placed in manual due to a transient caused by an automatic control malfunction, SM permission is required prior to returning the system or component to automatic control following stabilization from the transient and correction of the malfunction."

APPLICANT ACTION/RESPONSE:

The applicant incorrectly directed the Reactor Operator (RO) to place control rods back to automatic without first getting permission from the Shift Manager.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in his ability to keep other crew members informed by not getting permission from the shift manager prior to placing control rods back to automatic.

CROSS REFERENCE:

4.a: Communications – Provide Information

SCENARIO/EVENT:

Scenario 6, Event 1: ACCW Pump #1 Locked Rotor With Failure of the Standby ACCW Pump to Automatically Start

EXPECTED ACTION/RESPONSE:

The applicant, as Unit Operator (UO), was expected to enforce proper three way communication of technical data in accordance with the three-way communication standards stated in procedure 00004-C, "Plant Communications," Revision 9.5. Specifically, during this event, when the applicant stated that alarms were consistent with the failure of the ACCW pump malfunctions, it was expected that the Senior Reactor Operator (SRO) repeat the information and the applicant complete the communication by stating that the repeated information was correct.

APPLICANT ACTION/RESPONSE:

The applicant clearly stated to the SRO that the alarms were consistent with the ACCW pump malfunctions, but the SRO did not repeat the information. The applicant did not ensure that the SRO correctly received the information by forcing a repeat back of the information.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in his ability to correctly transmit technical information to the SRO.

(L)

CROSS REFERENCE:

4.a: Communications - Provide Information

SCENARIO/EVENT:

Scenario 6, Event 6: MFPT B turbine vibration will rise to > 5 mils requiring entry into 18013-C, "Rapid Power Reduction," and trip of MFPT B.

EXPECTED ACTION/RESPONSE:

The applicant, as UO, was expected to reduce turbine load as directed by the SS and announce crew updates for every 100 MW change.

APPLICANT ACTION/RESPONSE:

The applicant failed twice to update the crew via crew update as required by the rapid downpower procedure.

The applicant made only one error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in communicating required parameters to the crew.

CROSS REFERENCE:

4.a.: Communications – Clarity

SCENARIO/EVENT:

Scenario 7, Event 5: Pressurizer (PRZR) Pressure Channel PI-456 Failed High, PORV Block Valve HV-8000B Failed to Close in Automatic

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to clearly state verbal direction to the control room operators, including using proper plant nomenclature.

APPLICANT ACTION/RESPONSE:

When PI-456 failed high, the Reactor Operator (RO) correctly closed the PRZR spray valves, but then incorrectly turned the PRZR PORV switch to the "OPEN" position (thinking that she was closing the valve). When the PORV did not go closed, and with PRZR pressure lowering rapidly, the RO turned to the SRO for guidance. At this point, the applicant stated "SHUT THAT VALVE!" without giving any further nomenclature or clarification as to which valve he wanted to be closed. The RO then closed the PORV.

The applicant made one non-critical error associated with this rating factor, and was therefore evaluated with a score of "2" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of ability to make accurate, clear, and concise verbal reports.

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APPLICANT DOCKET NUMBER [REDACTED]

2/12 Examiner: Meeks (V)

CROSS REFERENCE:

4.c.: Communications – Receive Information

SCENARIO/EVENT:

Scenario 7, Event 7: MFRV #3 Failed Shut Requiring Reactor Trip, Three Stuck Rods

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to correctly receive verbal communications from the control board operators, and ensure appropriate corrections occurred when the communications from the control board operators were incorrect.

APPLICANT ACTION/RESPONSE:

After the manual reactor trip was initiated, the applicant directed the Reactor Operator (RO) to "check if SI is required," at step 4 RNO of 19000-C, "E-0 Reactor Trip or Safety Injection." The first bulleted substep of this RNO directs the operator to check "PRZR pressure less than or equal to 1870 psig." At this point, the RO checked Steam Generator pressures and reported to the applicant that "pressurizer pressures 1020 pounds and stable." Actual pressurizer pressure was 2228 psig at this time. The applicant failed to acknowledge the incorrect report from the RO, and failed to ensure the correct report was made. If actual PRZR pressure had been 1020 pounds, a Safety Injection should have been actuated.

The applicant made one non-critical error associated with this rating factor, and was therefore evaluated with a score of "2" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of ability to receive accurate, clear, and concise verbal reports.

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APPLICANT DOCKET NUMBER [REDACTED]

Examiner: Bates

CROSS REFERENCE:

6.a: Technical Specifications – Recognize and Locate

SCENARIO/EVENT:

Scenario 3, Event 4: Controlling Pressurizer Pressure Channel PT-455 Failed High

EXPECTED ACTION/RESPONSE:

In part, the applicant, as Senior Reactor Operator (SRO), was expected to identify Technical Specification (TS) 3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation, Function 1d (SI Low PRZR Press), Condition D, to place the channel in trip within 72 hours or be in Mode 3 within 78 hours and Mode 4 within 84 hours.

APPLICANT ACTION/RESPONSE:

The applicant did not document TS 3.3.2, Function 1d, Condition D, on her informal logs. Also, the applicant did not address any TS during her crew brief. After the scenario, the applicant was asked to state the TS implications of the failure. The applicant stated all required TS, with the exception of TS 3.3.2, Function 1d, Condition D.

The applicant made three non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in her ability to correctly recognize applicable Technical Specifications.

POTENTIAL CONSEQUENCES:

The potential consequences of not identifying a Technical Specification Required Action could result in operation outside of the licensed basis.

K/A (SRO IMPORTANCE RATING): G2.2.40 (4.7)

10CFR55.45(a)(13): Demonstrate the applicant's ability to function within the control room team as appropriate to the assigned position, in such a way that the facility licensee's procedures are adhered to and that the limitations in its license and amendments are not violated.

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CROSS REFERENCE:

6.a: Technical Specifications – Recognize and Locate

SCENARIO/EVENT:

Scenario 8, Event 4: Controlling Pressurizer Level Transmitter (LT-459) Failed Low

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to identify Technical Specification (TS) 3.3.4, Remote Shutdown System, Function 8, Condition A, for the loss of one required channel of pressurizer level instrumentation.

APPLICANT ACTION/RESPONSE:

The applicant did not identify TS 3.3.4, Function 8, Condition A. The applicant wrote down the other applicable TS on her informal log sheet, but did not write down TS 3.3.4, Function 8, Condition A. The applicant then conducted a crew brief and also did not initially discuss TS 3.3.4, Function 8, Condition A. She did however, go back and address the Technical Specification following the brief after the Unit Operator (UO) prompted her. The applicant was downgraded in this competency because she did not recognize TS 3.3.4, Function 8, Condition A, on her informal log or initially during the crew brief prior to being prompted by the UO.

The applicant made three non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in her ability to recognize applicable Technical Specifications.

POTENTIAL CONSEQUENCES:

The potential consequences of not identifying a Technical Specification Required Action could result in operation outside of the licensed basis.

K/A (SRO IMPORTANCE RATING): G2.2.40 (4.7)

10CFR55.45(a)(13): Demonstrate the applicant's ability to function within the control room team as appropriate to the assigned position, in such a way that the facility licensee's procedures are adhered to and that the limitations in its license and amendments are not violated.

CROSS REFERENCE:

6.a: Technical Specifications – Recognize and Locate

SCENARIO/EVENT:

Scenario 7, Event 5: Pressurizer Pressure Channel (PT-456) Failed High with PORV Block Valve Failure to Automatically Close

EXPECTED ACTION/RESPONSE:

The LCO bases of Technical Specification (TS) 3.4.11, "Pressurizer PORVs," states the following:

The LCO requires the PORVs and their associated block valves to be OPERABLE for manual operation to mitigate the effects associated with an SGTR, or loss of heat sink, and to achieve safety grade cold shutdown. The PORVs are considered OPERABLE in either the manual or automatic mode. [...] An OPERABLE PORV is required to be capable of manually opening and closing, and not experiencing excessive seat leakage. [...] An OPERABLE block valve may be either open and energized, or closed and energized with the capability to be opened, since the required safety function is accomplished by manual operation.

In accordance with the above, the applicant, as Reactor Operator (RO), was expected to correctly recognize that LCO 3.4.11 was met following the PI-456 failure and failure of the PORV block valve HV-8000B to close. Because both the PORV and the block valve were capable of being cycled in manual operation, both valves remained OPERABLE.

APPLICANT ACTION/RESPONSE:

After the scenario, the applicant was asked about the operability status of the PORV block valve that failed to automatically close. The applicant incorrectly informed the examiner that the PORV block valve was inoperable due to not automatically closing on low pressure as designed. The applicant was downgraded in this competency because of her incorrect understanding of PORV block valve operability requirements and the associated impacts on meeting the conditions of the LCO.

The applicant made three non-critical errors in this rating factor; therefore, a score of "1" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in her ability to recognize conditions which would require Technical Specification directed actions. The Basis for Technical Specification 3.4.11 states that the PORV block valve safety function may be accomplished manually. The applicant lacked the knowledge of the Basis for Technical Specification 3.4.11, which was required to make a correct operability determination on the PORV block valve.

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APPLICANT DOCKET NUMBER [REDACTED]

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POTENTIAL CONSEQUENCES:

The potential consequences of incorrectly determining the operability of a safety related component could result in operation outside of the licensed basis or an unnecessary plant transient created by incorrectly entering a Technical Specification Shutdown Statement.

K/A (SRO IMPORTANCE RATING): G2.2.37 (4.6)

10CFR55.45(a)(13): Demonstrate the applicant's ability to function within the control room team as appropriate to the assigned position, in such a way that the facility licensee's procedures are adhered to and that the limitations in its license and amendments are not violated.

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CROSS REFERENCE:

6.a: Technical Specifications – Recognize and Locate

SCENARIO/EVENT:

Scenario 6, Event 4: Controlling Pressurizer Level Transmitter (LT-459) Failed Low

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to identify Technical Specification (TS) 3.3.1, Reactor Trip System Instrumentation, Function 9, Condition M, for the loss of one required channel of Pressurizer Water Level – High.

The applicant was also expected to identify TS 3.3.4, Remote Shutdown System, Function 8, Condition A, for the loss of one required channel of pressurizer level instrumentation.

The applicant was not expected to identify TS 3.3.1, Reactor Trip System Instrumentation, Functions 8a and 8b, which pertained to pressurizer pressure.

APPLICANT ACTION/RESPONSE:

The applicant did not identify TS 3.3.1, Function 9, Condition M. The applicant also did not identify TS 3.3.4, Remote Shutdown System, Function 8, Condition A.

Furthermore, the applicant incorrectly identified TS 3.3.1, Functions 8a and 8b.

Correctly recognizing the Technical Specifications for this event was the only error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in his ability to recognize applicable Technical Specifications.

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APPLICANT DOCKET NUMBER [REDACTED]

Examiner: Bates

CROSS REFERENCE:

6.a: Technical Specifications – Recognize and Locate

SCENARIO/EVENT:

Scenario 2, Event 5: Normal Charging Pump (NCP) Tripped

EXPECTED ACTION/RESPONSE:

The applicant, as Senior Reactor Operator (SRO), was expected to identify Technical Requirement (TR) 13.1.3, Boration Flowpaths, and TR 13.1.5, Charging Pumps – Operating, due to Centrifugal Charging Pump (CCP) "A" being in PTL and the NCP being tripped.

APPLICANT ACTION/RESPONSE:

The applicant did not identify the TRM requirements during the scenario; therefore, after the scenario, the examiner questioned the applicant on applicable Technical Specifications for the plant conditions at the time the NCP tripped. When the applicant did not mention any applicable Technical Specifications, the examiner asked specifically about requirements in the Technical Requirements Manual (TRM). The applicant again did not state any TRM required actions. The applicant was downgraded in this competency because he did not identify applicable requirements from the TRM.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in identification of TRM action statements.

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APPLICANT DOCKET NUMBER [REDACTED]

2/19

Examiner: Bates

CROSS REFERENCE:

6.a: Technical Specifications – Recognize and Locate

SCENARIO/EVENT:

Scenario 7, Event 5: Pressurizer Pressure Channel (PT-456) Failed High with PORV Block Valve Failure to Automatically Close

EXPECTED ACTION/RESPONSE:

The applicant, as Reactor Operator (RO), was expected to recognize that the failure of the PORV block valve did not result in the block valve being inoperable. The Basis for Technical Specification 3.4.11 states that the PORV block valve safety function may be accomplished manually.

APPLICANT ACTION/RESPONSE:

The applicant failed to recognize that the failure of the PORV block valve did not result in the block valve being inoperable.

After the scenario, the applicant was asked about the operability status of the PORV block valve that failed to automatically close. The applicant incorrectly informed the examiner that the PORV block valve was inoperable due to not automatically closing on low pressure as designed. The applicant was downgraded in this competency because of his incorrect understanding of PORV block valve operability requirements the associated impacts on LCO entry.

The applicant made one non-critical error in this rating factor; therefore, a score of "2" was assigned.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a weakness in his ability to recognize conditions which would require Technical Specification directed actions.

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CROSS REFERENCE:

6.a: Technical Specifications – Recognize and Locate

SCENARIO/EVENT:

Scenario 7, Event 5: Pressurizer (PRZR) Pressure Channel PI-456 Failed High, PORV Block Valve HV-8000B Failed to Close in Automatic

EXPECTED ACTION/RESPONSE:

The LCO bases of Technical Specification (TS) 3.4.11, "Pressurizer PORVs," states the following:

The LCO requires the PORVs and their associated block valves to be OPERABLE for manual operation to mitigate the effects associated with an SGTR, or loss of heat sink, and to achieve safety grade cold shutdown. The PORVs are considered OPERABLE in either the manual or automatic mode. [...] An OPERABLE PORV is required to be capable of manually opening and closing, and not experiencing excessive seat leakage. [...] An OPERABLE block valve may be either open and energized, or closed and energized with the capability to be opened, since the required safety function is accomplished by manual operation.

In accordance with the above, the applicant, as Senior Reactor Operator (SRO), was expected to correctly recognize that LCO 3.4.11 was met following the PI-456 failure and failure of the PORV block valve HV-8000B to close. Because both the PORV and the block valve were capable of being cycled in manual operation, both valves remained OPERABLE.

APPLICANT ACTION/RESPONSE:

When the applicant performed step C9 of AOP 18001-C, which directs placing the PORVs in AUTO, the applicant directed the Reactor Operator to maintain the PORV in manual and closed per the Tech Specs.

During post-scenario follow-up questions, the applicant incorrectly stated that he had entered Condition C of LCO 3.4.11 for an inoperable PORV block valve. The applicant made one non-critical error associated with this rating factor, and was therefore evaluated with a score of "2" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of ability to determine operability and/or availability of safety related equipment (K/A G2.2.37).

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APPLICANT DOCKET NUMBER [REDACTED]

Examiner: Meks

CROSS REFERENCE:

6.a: Technical Specifications – Recognize and Locate

SCENARIO/EVENT:

Scenario 7, Event 5: Pressurizer (PRZR) Pressure Channel PI-456 Failed High, PORV Block Valve HV-8000B Failed to Close in Automatic

EXPECTED ACTION/RESPONSE:

The LCO bases of Technical Specification (TS) 3.4.11, "Pressurizer PORVs," states the following:

The LCO requires the PORVs and their associated block valves to be OPERABLE for manual operation to mitigate the effects associated with an SGTR, or loss of heat sink, and to achieve safety grade cold shutdown. The PORVs are considered OPERABLE in either the manual or automatic mode. [...] An OPERABLE PORV is required to be capable of manually opening and closing, and not experiencing excessive seat leakage. [...] An OPERABLE block valve may be either open and energized, or closed and energized with the capability to be opened, since the required safety function is accomplished by manual operation.

In accordance with the above, the applicant, as Senior Reactor Operator (SRO), was expected to correctly recognize that LCO 3.4.11 was met following the PI-456 failure and failure of the PORV block valve HV-8000B to close. Because both the PORV and the block valve were capable of being cycled in manual operation, both valves remained OPERABLE.

APPLICANT ACTION/RESPONSE:

When the applicant performed step C9 of AOP 18001-C, which directs placing the PORVs in AUTO, the applicant stated that he would "maintain PORV-456 in the close position due to Tech Spec action."

During post-scenario follow-up questions, the applicant incorrectly stated that he could not perform step C9 because he was required by Tech Specs to keep the PORV in manual and closed. The applicant further stated that he "...was more comfortable calling it inoperable and having people look at it. To manually cycle the block valve would constitute troubleshooting." The applicant made one non-critical error associated with this rating factor, and was therefore evaluated with a score of "2" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of ability to determine operability and/or availability of safety related equipment.

CROSS REFERENCE:

6.a: Technical Specifications – Recognize and Locate

SCENARIO/EVENT:

Scenario 4, Event 5: Reserve Auxiliary Transformer (RAT) Supply Breakers to Bus 1AA02 Tripped Open Due to a Fault on the Bus. Diesel Generator (DG) 1A Started, but Did Not Re-Energize the Bus

EXPECTED ACTION/RESPONSE:

During the post-transient actions, procedure AOP 18031-C, "Loss of Class 1E Electrical Systems," directs the operators to take manual control of the turbine-driven AFW pump and lower speed. This action renders the TDAFW pump inoperable. The "A" motor-driven AFW pump would also be inoperable due to the loss of bus 1AA02. The applicant, as Senior Reactor Operator (SRO), was expected to recognize this condition and correctly enter LCO 3.7.5 Condition C, which requires the plant to shut down to MODE 3 in a 6 hour completion time.

APPLICANT ACTION/RESPONSE:

During post-scenario follow-up questions, the applicant incorrectly stated that the only Technical Specification he was in for this event was LCO 3.8.1 Condition B for one inoperable DG.

The applicant made one non-critical error associated with this rating factor, and was therefore evaluated with a score of "2" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of ability to determine operability and/or availability of safety related equipment.

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APPLICANT DOCKET NUMBER [REDACTED]

Ex 6

Examiner: Meek

CROSS REFERENCE:

6.b: Technical Specifications – Compliance

SCENARIO/EVENT:

Scenario 4, Event 5: Reserve Auxiliary Transformer (RAT) Supply Breakers to Bus 1AA02 Tripped Open Due to a Fault on the Bus. Diesel Generator (DG) 1A Started, but Did Not Re-Energize the Bus

EXPECTED ACTION/RESPONSE:

Due to the electrical fault on safeguards bus 1AA02, the offsite circuit supplying this train was rendered inoperable and DG 1A was also rendered inoperable (*i.e.*, the bus failure prevented either source of electrical power to perform its designed safety functions). The applicant, as Senior Reactor Operator (SRO), was expected to correctly comply with this condition in accordance with Technical Specification (TS) 3.8.1, "AC Sources – Operating." The applicant was expected to enter (1) LCO 3.8.1 Condition A for one required offsite circuit inoperable, (2) LCO 3.8.1 Condition B for one DG inoperable, and (3) LCO 3.8.1 Condition E for one required offsite circuit inoperable AND one DG inoperable; and to perform all required actions for these conditions.

APPLICANT ACTION/RESPONSE:

During post-scenario follow-up questions, the applicant incorrectly stated that the only Technical Specification he was in for this event was LCO 3.8.1 Condition B for one inoperable DG.

The applicant made one non-critical error associated with this rating factor, and was therefore evaluated with a score of "2" for this rating factor.

LACK OF ABILITY/KNOWLEDGE:

The applicant demonstrated a lack of ability to determine operability and/or availability of safety related equipment.

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