DRAFT

Attachment 7

TempNo.	PI	Question/Response	Status	Plant/ Co.
27.3	IE02	Question: Should a reactor scram due to high reactor water level, where the feedwater pumps tripped due to the high reactor water level, count as a scram with a loss of normal heat removal Background Information: On April 6, 2001 LaSalle Unit 2 (BWR), during maintenance on a motor driven feedwater pump regulating valve, experienced a reactor automatic reactor scram on high reactor water level. During the recovery, both turbine driven reactor feedwater pumps (TDRFPs) tripped due to high reactor water level. The motor driven reactor feedwater pump was not available due to the maintenance being performed. The reactor operators choose to restore reactor water level through the use of the Reactor Core Isolation Cooling (RCIC) System, due to the fine flow control capability of this system, rather than restore the TDRFPs. Feedwater could have been restored by resetting a TDRFP as soon as the control board high reactor water level alarm cleared. Procedure LGA-001 "RPV Control" (Reactor Pressure Vessel control) requires the unit operator to "Control RPV water level between 11 in. and 59.5 in. using any of the systems listed below: Condensate/feedwater, RCIC, HPCS, LPCS, LPCI, RHR." The following control room response actions, from standard operating procedure LOP-FW-04, "Startup of the TDRFP" are required to reset a TDRFP. No actions are required outside of the control room (and no diagnostic steps are required). Verify the following: TDRFP M/A XFER (Manual/Automatic Controller) station is reset to Minimum No TDRFP trip signals are present Depress TDRFP Turbine RESET pushbutton and observe the following Turbine RESET light Illuminates TDRFP High Pressure and Low Pressure Stop Valves OPEN PUSH M/A increase pushbutton on the Manual/Automatic Controller station Should this be considered a scram with the loss of normal heat removal? Proposed Answer: The ROP working group is currently working to prepare a response.	1/25 Introduced 2/28 NRC to discuss with resident 4/25 Discussed 5/22 On hold 6/12 Discussed. Related FAQ 30.8 9/26 Discussed 10/31 Discussed	LaSalle

Attachment 7

TempNo.	PI	Question/Response	Status	Plant/ Co.
28.3	IE02	Question: This event was initiated because a feedwater summer card failed low. The failure caused the feedwater circuitry to sense a lower level than actual. This invalid low level signal caused the Reactor Recirculation pumps to shift to slow speed while also causing the feedwater system to feed the Reactor Pressure Vessel (RPV) until a high level scram (Reactor Vessel Water Level – High, Level 8) was initiated. Within the first three minutes of the transient, the plant had gone from Level 8, which initiated the scram, to Level 2 (Reactor Vessel Water Level – Low Low, Level 2), initiating High Pressure Core Spray (HPCS) and Reactor Core Isolation Cooling (RCIC) injection, and again back to Level 8. The operators had observed the downshift of the Recirculation pumps nearly coincident with the scram, and it was not immediately apparent what had caused the trip due to the rapid sequence of events. As designed, when the reactor water level reached Level 8, the operating turbine driven feed pumps tripped. The pump control logic prohibits restart of the feed pumps (both the turbine driven pumps and motor driven feed pump (MFP)) until the Level 8 signal is reset. (On a trip of one or both turbine feed pumps, the MFP would automatically start, except when the trip is due to Level 8.) All three feedwater pumps (both turbine driven pumps and the MFP) were physically available to be started from the control room, once the Level 8 trip was reset. Procedures are in place for the operators to start the MFP or the turbine driven feedwater pumps in this situation. Because the cause of the scram was not immediately apparent to the operators, there was initially some misunderstanding regarding the status of the MFP. (Because the card failure resulted in a sensed low level, the combination of the recirculation pump downshift, the reactor scram, and the initiation of HPCS and RCIC at Level 2 provided several indications to suspect low water level caused the scram.) As a result of the initial indications of a plant problem (the downshift of the recirculation pumps), some operators believed the MFP should have started on the trip of the turbine driven pumps. This was documented in several personnel statements and a narrative log entry. Contributing to this initial misunderstanding was a MFP control power available light bulb that did not illuminate until it was touched. In fact, the MFP had functioned as it was supposed to, and aside from the indication on the control panel, there were no impediments to restarting any of the feedwater pumps from the control room. No attempt was made to manually start the MFP prior to resetting the Level 8 feedwater trip signal. Regardless of the issue with the MFP, however, both turbine driven feed pumps were available once the high reactor water level cleared, and could have been started from the control room without diagnosis or repair. Procedures are in place to accomplish this restart, and operators are trained in the evolution. Since RCIC was already in operation, operators elected to use it as the source of inventory, as provided for in the plant emergency instructions, until plant conditions stabilized. Should this event be counted as a Scram with a Loss of Normal Heat Removal? Response: The ROP working group is currently working to prepare a response.	3/21 Discussed 4/25 Discussed 5/22 Modified to reflect discussion of 4/25, On Hold 6/12 Discussed. Related FAQ 30.8	Perry
30.8	IE02	Question: Many plant designs trip the main feedwater pumps on high reactor water level (BWRs), and high steam generator water level or certain other automatic trips (PWRs). Under what conditions would a trip of the main feedwater pumps be considered/not considered a scram with loss of normal heat removal? Response: The ROP working group is currently working to prepare a response.	5/22 Introduced 6/12 Discussed 9/26 Discussed. 10/31 Discussed	Generic

TempNo.	PI	Question/Response	Status	Plant/ Co.
31.7	EP03	Question: During a recent Nuclear Regulatory Commission (NRC) inspection of the Alert and Notification System (ANS) Reliability Performance Indicator (PI) at Calvert Cliffs Nuclear Power Plant (CCNPP), the inspector identified an issue concerning how CCNPP reports weekly silent test results for the ANS PI. While reviewing the ANS PI data, the inspector observed that weekly silent testing consisted of transmitting three consecutive initiation signals during the scheduled silent activation test. The inspector also observed that when reporting the PI data, CCNPP reports the three initiation signals as one test and reports the test as a success if at least one out of three initiation signals is received. When none of the three initiation signals is received, the test is considered an unsuccessful silent activation. The inspector determined that by not counting and reporting each of the three initiation signals as separate siren tests, CCNPP could be unintentionally masking failures and may not be meeting the intent of the ANS PI. This issue was documented in NRC Inspection Report 50-317/02-010, 50-318/02-010, dated August 12, 2002, as an Unresolved Item. Beginning in June 2001, the Calvert County procedure for activating the siren system during an actual emergency was revised to require the transmission of three sets of initiating tones to activate the sirens for one cycle. Coincident with this revision, the weekly silent test procedure was revised to mimic the full siren activation process during an actual emergency. The current CCNPP ANS is designed with no direct feedback mechanism or polling operation for siren activation. At Calvert Cliffs, we utilize three sets of initiating tones to simulate newer system designs that provide feedback and poll a receiver until it responds. This methodology minimizes the effect of momentary channel interference, provides greater assurance that each siren will perform its function, and allows us to monitor individual siren performance. The change in activation and testing methodology was not submitted to FEMA for approval prior to use. When activating sirens during an actual emergency and during weekly silent testing the following procedure is used. The 911 dispatcher checks to make sure the radio channel is clear. The 911 dispatcher makes an announcement that the Calvert Cliffs Public ANS is being sounded (or tested for silent testing). The 911 dispatcher selects the CCNPP Sirens icon. A 911 supervisor verifies that the correct icon is selected. The 911 dispatcher selects the transmit icon to send the first set of tones. The 911 dispatcher then waits 10 seconds and when the channel is clear, repeats the announcement, selects the icon, waits for supervisor verification, and sends the second set of tones. The 911 dispatcher then waits 10 seconds and when channel is clear, repeats the announcement, selects the icon, waits for supervisor verification, and sends the third set of tones. When the third set of tones have cleared, the 911 dispatcher makes an announcement that the siren activation is completed. It takes approximately one minute or less to transmit the three sets of initiating tones for a siren activation during the actual emergency and weekly silent test. We have reviewed siren testing data since the beginning of 2002 to identify whether sirens that received less than three initiation signals were capable of receiving the initiation signals during the next week's silent siren tests. This review indicated that out of 60 instances where a siren received less than three initiation signals, there was only one instance where a siren did not receive any of the three initiation signals during the next week's silent siren test. This does not include the times when a transmitter failure occurred causing multiple siren failures. The review of the data confirms that, for the most part, sirens receiving less than three initiation signals due to possible intermittent transmitter or receiver failures were capable of receiving at least one of the three initiation signals during the next week's silent siren tests. Given the testing methodology described above, is CCNPP reporting the results of weekly silent tests correctly? Response: The ROP working group is currently working to prepare a response.	9/26 Introduced 10/31 Discussed 1/23 Discussed. Query sent to FEMA 3/20 Discussed 5/1 Discussed *5.22 Discussed*	Calvert Cliffs
32.3a	IE02	Question: An unplanned scram occurred October 7, 2001, during startup following an extended forced outage. The unit was in Mode 1 at approximately 8% reactor power with a main feed pump and low-flow feedwater preheating in service. The operators were preparing to roll the main turbine when a reactor tripped occurred. The cause of the trip was a loss of voltage to the	1/23 Revised. Split into two FAQs 3/20 Discussed 5/1 Discussed	DC Cook

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		control rod drive mechanisms and was not related to the heat removal path. Main feedwater isolated on the trip, as designed, with the steam generators being supplied by the auxiliary feedwater (AFW) pumps. At 5 minutes after the trip, the reactor coolant system (RCS) temperature was 540 degrees and trending down. The operators verified that the steam dumps, steam generator power operated relief valves, start-up steam supplies and blowdown were isolated. Additionally, AFW flow was isolated to all Steam Generators as allowed by the trip response procedure. At 9 minutes after the trip, with RCS temperature still trending down, the main steam isolation valves (MSIV) were closed in accordance with the reactor trip response procedure curtailing the cooldown. The RCS cooldown was attributed to steam that was still being supplied to low-flow feedwater preheating and #4 steam generator AFW flow control valve not automatically moving to its flow retention position as expected with high AFW flow. The low-flow feedwater preheating is a known steam load during low power operations and the AFW flow control issue was identified by the control room balance of plant operator. The trip response procedure directs the operators to check for and take actions to control AFW flow and eliminate the feedwater heater steam supply. When this trip occurred the unit was just starting up following a 40 day forced outage. The reactor was at approximately 8% power and there was very little decay heat present following the trip. With very little decay heat available, the primary contribution to RCS heating is from Reactor Coolant Pumps (RCPs). Evaluation of these heat loads, when compared to the cooling provided by AFW, shows that there is approximately 3.5 times as much cooling flow provided than is required to remove decay heat under these conditions plus pump heat. This resulted in rapid cooling of the RCS and ultimately required closure of the MSIVs. Other conditions such as low flow feedwater preheating and the additional AFW flow due to the AFW flow control valve failing to move to its flow retention setting contributed to this cooldown, but were not the primary cause. Even without these contributors to the cooldown, closure of MSIVs would have been required due to the low decay heat present following the trip. It should also be noted that the conditions that are identified as contributing to the cooldown are not conditions which prevent the secondary plant from being available for use as a cooldown path. The AFW flow control valve not going to the flow retention setting increases the AFW flow to the S/G, and in turn causes an increase in cooldown. This condition is corrected by the trip response procedure since the procedure directs the operator to control AFW flow as a method to stabilize the RCS temperature. With low-flow feedwater preheating in service, main steam is aligned to feedwater heaters 5 and 6 and is remotely regulated from the control room. Low-flow feedwater preheating is used until turbine bleed steam is sufficient to provide the steam supply then the system is isolated. There are no automatic controls or responses associated with the regulating valves, so when a trip occurs, operators must close the regulating valves to secure the steam source. Until the steam regulating valves are closed, this is a steam load contributing to a cooldown. The low-flow preheating steam supplies are identified in the trip response procedure since they are a CNP specific design issue. The actions taken to control RCS cooldown were in accordance with the plant procedure in response to the trip. The primary reason that the MSIVs were required to be closed was due to the low level of decay heat present following a 40 day forced outage. The closure of the MSIVs was to control the cooldown as directed by plant procedure and not to mitigate an off-normal condition or for the safety of personnel or equipment. With the low decay heat present following the 40 day forced outage, there would not have been a need to reopen the MSIVs prior to recommencing the startup. Should the reactor trip described above be counted in the Unplanned Scrams with Loss of Normal Heat Removal Performance Indicator?	5/22 Tentative Approval *6/18 Dicussion deferred to July*	
		Response: Yes. The licensee's reactor trip response procedure has an "action/expected response" that reactor coolant system temperature following a trip would be stable at or trending to the no-load Tavg value. If that expected response is not obtained, operators are directed to stop dumping steam and verify that steam generator blowdown is isolated. If cooldown continues, operators are directed to control total feedwater flow. If cooldown continues, operators are directed to close all steam generator stop valves (MSIVs) and other steam valves.		

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		During the unit trip described, the #4 steam generator auxiliary feedwater flow control valve did not reposition to the flow retention setting as expected (an off normal condition). In addition, although control room operators manually closed the low-flow feedwater preheat control valves that were in service, leakage past these valves (a pre-existing degraded condition identified in the Operator Workaround database) also contributed to the cooldown. Operator logs attributed the reactor system cooldown to the #4 AFW flow control valve failure as well as to steam being supplied to low-flow feedwater preheating. As stated above, the trip response procedure directs operators to control feedwater flow in order to control the cooldown. Operator inability to control the cooldown through control of feedwater flow as directed is considered an off normal condition. Since the cooldown continued due to an off normal condition, operators closed the MSIVs, and therefore this trip is considered a scram with loss of normal heat removal.		
34.5	MS03	Question: *Should the fault exposure time associated with a design deficiency that was revealed as a result of surveillance testing, but due to factors that are not a part of normal testing be included in the calculation for determining unavailability?* *Background: During post maintenance testing of an auxiliary feed water pump, the flow through the pump recirculation line was noted to be lower than allowed by the test procedure (but within pump manufacturer requirements). Note – no actual failure occurred and it was initially determined that the pump would have met its mission time. An investigation revealed that a flow orifice in the recirculation line was partially plugged with corrosion products, most likely introduced when the pump and associated piping were drained for maintenance. The normal suction path for Aux. Feedwater when conducting surveillance testing is the condensate storage tank (CST). The alternate water supply is safety-related service water (lake).* *A determination was later made that the orifices would likely plug from suspended material in the service water supply and render the trains incapable of performing their safety function during an operational event.* *NEI 99-02 page 33 lines 8-23 indicates that equipment failures due to design deficiencies should be evaluated for inclusion if the failure is capable of being discovered during surveillance testing but should be evaluated under the NRC's Significance Determination Process if the failure was not capable of being discovered during <u>normal</u> surveillance test. The lack of the word "normal" in the first statement implies both conditions apply to this situation if a literal interpretation is used* Response: *The introduction of corrosion products into the AFW pump casing is not normal to the test. This failure is amenable to evaluation through the NRC's Significance Determination Process. The fault exposure hours associated with the failure are excluded from the indicator*	3/20 Introduced 3/20 Tentative Approval 5/1 Question to be rewritten	Point Beach

TempNo.	PI	Question/Response	Status	Plant/ Co.
34.6	IE02	*Question:* *STP Unit Two was manually tripped on Dec. 15, 2002 as required by the off normal procedure for high vibration of the main turbine. Plant conditions were stabilized using Auxiliary Feedwater and Steam Generator Power Operated Relief Valves in accordance with normal plant procedures. Approximately 17 minutes after the Unit was manually tripped main condenser vacuum was broken at the discretion of the Shift Supervisor to assist in slowing the turbine and establishing the correct maintenance conditions to inspect the turbine. (Review of the event has shown that the perceived urgency to slow the turbine was unnecessary.) Main Feedwater remained available via the electric motor driven Startup Feedwater pump. Main steam headers remained available to provide cooling via the steam dump valves (MSIVs were closed, but steam headers remained fully pressurized). At any time vacuum could have been reestablished without diagnoses or repair using established operating procedures with one simple virtually assued action outside the control room (start vacuum pumps).* *Since the decision to break condenser vacuum was at the discretion of the Shift Supervisor after establishing normal long term heat removal via AFW and S/G PORVs, and vacuum could have been restored using plant operating procedures, should this be counted as an Unplanned Scram With Loss Of Normal Heat Removal. The CCDP for this event was 2.68E-7. CLERP was 1.20E-8.*~~*STP Unit Two was manually tripped on Dec. 15, 2002 as required by the off normal procedure for high vibration of the main turbine. Approximately 13 minutes after the Unit was manually tripped main condenser vacuum was broken at the discretion of the Shift Supervisor to assist in slowing the turbine. (Review of the event has shown that the perceived urgency to slow the turbine was unnecessary.) Plant conditions were stabilized using Auxiliary Feedwater and Steam Generator Power Operated Relief Valves. Main Feedwater remained available via the electric motor driven Startup Feedwater pump. Main steam headers remained available to provide cooling via the steam dump valves. At any time vacuum could have been reestablished without diagnoses or repair using established operating procedures until after completion of the scram response procedures.*~~ ~~*Since the reason for the decision to break condenser vacuum was the perceived need to protect the main turbine from further damage, and vacuum could have been restored using plant operating procedures, should this be counted as an Unplanned Scram With Loss Of Normal Heat Removal.*~~ Response: The ROP working group is currently working to prepare a response. *Proposed Response:* *NO. Since vacuum was secured at the discretion of the Shift Supervisor and could have been restored using existing normally performed operating procedures, the function meets the intention of being available but not used.*	3/20 Introduced 3/20 Discussed	STP

TempNo.	PI	Question/Response	Status	Plant/ Co.
34.7	BI02	Question: Plant TS require RCS leakage be determined periodically during steady-state operation but in no case at an interval of greater than 120 hours. In some start-up cases, when the maximum surveillance interval is approached a non-steady state RCS leakage calculation must be taken which can provide an inaccurate indication of RCS leakage (confirmed by subsequent calculations). Additionally, RCS leakage is required to support ISTs of check valves associated with loop injection upon entry into Mode 4 from Mode 5. Both of these conditions result in *invalid* RCS leakage calculations during non-steady state conditions that can skew the data. When the monthly RCS leakage calculations are reviewed for the maximum monthly result, ~~can~~*should invalid* calculations made during non-steady state operation be ignored?. Response: No. *Any* RCS leakage determination~~s~~ made in accordance with plant technical specifications are included in the performance indicator calculation.	5/22 Tentative Approval	SONGS
35.1	*EP01*	*Question:* *STP performs "team training" during licensed operator requalification (LOR) by scheduling on-shift E-Plan drills during concurrent LOR, Plant Operator Requalification (POR) and Health Physics Continuing Training. This allows us to exercise the on-shift ERO as a unit instead of individually in training sessions. We count classification and PAR development opportunities and notification opportunities and evaluate performance during these opportunities.* *During these sessions, occasionally the Shift Supervisor requests that the Unit Supervisor perform as the Emergency Director as part of his training for upgrade to full Shift Supervisor qualification. This is recognized and planed for prior to the start for the session. Based on NRC regional inspector intrepretation and direction we do not count the classification and PAR opportunities since the Unit Supervisor is not counted as key responder in the ERO. We do count the notification opportunities and award ERO participation credit to the non-licensed operators.* *Is it allowed to count the notification as an opportunity and award ERO participation credit for the non-licensed plant operator performing the key responder role for notification?* *We have two differing opinions on whether counting the notification opportunity and awarding ERO participation credit is permitted.* *Those who say it is not permitted cite NEI 99-02 Revision 2 page 86 lines 5 and 6 ("Performance statistics from operating shift simulator training evaluations may be included in this indicator only when the scope requires classification.") and page 90 lines 39 and 40 ("The scenarios must at least contain a formally assessed classification and the results must be included in DEP statistics.")* *Those who say it is permitted also cite NEI 99-02 Revision 2 page 80 lines 6 and 7 and say the "scope" of the drill does include classification, although not counted as an opportunity for the metric. Additionally argued is that the plant operators are not in LOR, they are in POR engaged in a performance-enhancing experience and that performing the activity in the simulator should not preclude counting the notification opportunities. This group recognizes that page 90 lines 39 and 40 specify that ERO Participation credit can not be given for simulator sessions in the case of those responders that are required to perform classification opportunities. In the case of those responders who perform notifications, performance credit should be given for the simulator sessions since it is a more realistic exercise where they are caught up in the event. In both cases (classroom setting and simulator setting) they are provided with an approved notification worksheet to conduct the notification exercise.*	*6/18 Introduced*	*STPEGS*

TempNo.	PI	Question/Response	Status	Plant/ Co.
35.2	*EP01*	*Question:* *STP performs "team training" during licensed operator requalification (LOR) by scheduling on-shift E-Plan drills during concurrent LOR, Plant Operator Requalification (POR) and Health Physics Continuing Training. This allows us to exercise the on-shift ERO as a unit instead of individually in training sessions. We count classification and PAR development opportunities and notification opportunities and evaluate performance during these opportunities.* *During these sessions, occasionally the Shift Supervisor requests that the Unit Supervisor perform as the Emergency Director as part of his training for upgrade to full Shift Supervisor qualification. This is recognized and planed for prior to the start for the session. Based on NRC regional inspector intrepretation and direction we do not count the classification and PAR opportunities since the Unit Supervisor is not counted as key responder in the ERO. We do count the notification opportunities and award ERO participation credit to the non-licensed operators.* *Is it allowed to count the classification as an opportunity even though it is performed by the Unit Supervisor who is not defined as a key responder but is qualified to perform this task (qualified as Emergency Director)?* *We have two differing opinions on whether counting the notification opportunity and awarding ERO participation credit is permitted.* *Those who say it is not permitted cite NEI 99-02 Revision 2 page 90 lines 37 through 42.* *Evaluated simulator training evolutions that contribute to Drill/Exercise Performance indicator statistics may be considered as opportunities for key ERO member participation and may be used for this indicator. The scenarios must at least contain a formally assessed classification and the results must be included in DEP statistics. However, there is no intent to disrupt ongoing operator qualification programs. Appropriate operator training evolutions should be included in this indicator only when Emergency Preparedness aspects are consistent with training goals.* *This is interpreted to mean that only those who are key responders may perform classification opportunities for credit.* *Those who say it is permitted cite NEI 99-02 Revision 2 page 85 lines 21 through 23.* *As a minimum, actual emergency declarations and evaluated exercises are to be included in this indicator. In addition, other simulated emergency events that the licensee formally assesses for performance of classification, notification or PAR development may be included in this indicator (opportunities cannot be removed from the indicator due to poor performance).* *The guidance does not prohibit a licensee from assessing for performance of classification by others than key responders. It seems beneficial to allow this so those that may fill the position are evaluated in this task.*	*6/18 Introduced*	*STPEGS*
35.3	*EP01*	*Question:* *If a scenario predicts that a default protective action recommendation will be used and therefore not counted as an opportunity, can the associated notification be counted as an opportunity?* *NEI 99-02 Revision 2 page 87 lines 8 through 10 state:* *The notification associated with a PAR is counted separately: e. g., an event triggering a GE classification would represent a total of 4 opportunities: 1 for classification of the GE, 1 for notification of the GE to the State and/or local government authorities, 1 for development of a PAR and 1 for notification of the PAR.* *This would indicate that the notification for a PAR is separate from the decision to issue the PAR. Regardless of the source of the decision, the actions required to perform the notification for the PAR are the same and should be counted as an opportunity.*	*6/18 introduced*	*STPEGS*