

Pilgrim 1 2Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2015

Identified By: Self-Revealing

Item Type: FIN Finding

Ineffective Corrective Action Leads to Cavitation of Residual Heat Removal Pump

A self-revealing Green finding was identified when residual heat removal pump (RHR) 'B' experienced cavitation during refueling and maintenance outage (RFO) 20 that was a result of inadequate corrective actions associated with equipment used to determine flow rate. Specifically, prior to placing augmented fuel pool cooling mode in service on April 26, 2015, Entergy did not ensure that the temporary flow transmitter was properly setup and calibrated because corrective actions from 2011 were not adequate to ensure proper setup in the future. As a result, when operators went to raise flow in accordance with their procedural requirement, residual heat removal pump 'B' experienced cavitation and operators secured the pump because the flow transmitter was inaccurately reading low. Entergy's immediate corrective actions included entering the issue into the corrective action program (CAP) as CR-2015-3724, re-calibrating and setting up the ultrasonic flow meter, and establishing a second ultrasonic flow meter to ensure proper flow. Inspectors performed a walkdown to ensure proper operation of the ultrasonic flow meters, and confirmed similar readings between the two flow meters on April 27, 2015.

The finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the 'B' RHR pump was secured from AFPC mode 2 on April 26, 2015 when the installed ultrasonic flow meter did not read properly, leading to operation of the 'B' RHR pump outside of flow limits specified in procedure 2.2.85.2 and cavitation of the pump. This finding was evaluated in accordance with IMC 0609.04 Initial Characterization of Findings," and Exhibit 2, Section C.6 of IMC 0609 Appendix G, Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings," issued May 9, 2014, the inspectors determined that this finding is of very low safety significance (Green) because while the performance deficiency resulted in the 'B' RHR pump being secured due to cavitation, it did occur when the refuel canal/cavity was flooded and did not increase the likelihood of a fire or internal/external flood that could cause a shutdown initiating event. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, because Entergy staff did not thoroughly evaluate the issues associated with the ultrasonic flow meter in 2011 and 2013 to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, Entergy's corrective action process did not thoroughly evaluate and develop appropriate corrective actions for CR-2011-1847 and CR-2013-2857 to ensure the cause was addressed to prevent challenges using ultrasonic flow meters during AFPC for both mode one and mode two. (P.2)

Inspection Report# : [2015002](#) (*pdf*)

Significance: G Mar 20, 2015

Identified By: Self-Revealing

Item Type: FIN Finding

Inadequate Testing of the Diesel-Driven Air Compressor

. A self-revealing Green finding was identified for Entergy's failure to verify that the diesel-driven air compressor (K-117) was available for service prior to the January 27, 2015 winter storm. Specifically, although K-117 was tested prior to the winter storm, the test methodology did not reveal that the capacity of the starting battery was inadequate. The failure to verify that the diesel-driven air compressor (K-117) was available for service prior to the January 27, 2015 winter storm is a performance deficiency that was within Entergy's ability to foresee and correct. This resulted in a loss of instrument air during the plant trip which complicated the event response. Entergy entered the issue into the corrective action program (CAP) as condition report (CR)-PNP-2015-00559 and initiated actions to supply instrument air with a temporary air compressor. Entergy also revised the operability test for K-117 air compressor to remove the alternating current (AC) power source prior to starting the air compressor.

This self-revealing issue was more than minor because it is associated with the procedure quality and design control attributes of the Initiating Events cornerstone and adversely impacted the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, failure of K-117 resulted in loss of instrument air, which adversely impacted the plant response during the January 27, 2015 winter storm. Additionally, this issue is also associated with the procedure quality and design control attributes of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating event to prevent undesirable consequences.

The inspectors screened the issue under the Initiating Events cornerstone using Attachment 4 and Exhibit 1 of Appendix A to IMC 0609, "Significance Determination Process," because that cornerstone was determined to be more impacted by the finding than the Mitigating Systems cornerstone. The inspectors concluded that a detailed risk evaluation would be required because the finding involved the complete loss of a support system (instrument air) that contributes to the likelihood of an initiating event and affects mitigation equipment. A senior reactor analyst performed a detailed risk evaluation of this issue. The NRC model for PNPS was adjusted to account for a loss of the instrument air compressor on a LOOP. The change in core damage frequency was very low. A review of the dominant accident sequences indicated the contribution from a large early release and from external risk contributors to be very small. Therefore, the issue was determined to be of very low risk significance (Green).

The finding had a cross-cutting aspect in the area of Human Performance, Design Margins, because Entergy failed to ensure that the K-117 battery was designed with adequate margin. This finding is reflective of current performance because the inadequate design margin of the battery should have been discovered through proper testing [H.6].

Inspection Report# : [2015007](#) (pdf)

Significance:  Dec 12, 2014

Identified By: NRC

Item Type: FIN Finding

Failure to Fully Derive the Cause of a Manual Scram

Inspectors identified a Green finding because Entergy did not fully derive the causes of the manual scram on August 22, 2013, following a loss of all feedwater. Specifically Entergy did not investigate the causes of a failed cable splice which directly caused an electrical transient that resulted in the automatic tripping of all three reactor feed pumps (RFPs) in accordance with the standards in Entergy procedures EN-LI-118, "Cause Evaluation Process," and EN-LI-118-01, "Event and Causal Factor Charting." Entergy entered the issue into the CAP as condition report (CR)-PNP-2014-5796 and initiated additional causal analysis to determine why the splice was improperly fabricated.

This performance deficiency affects the equipment performance attribute of the Initiating Events cornerstone, because the failure to fully derive the causes of the failed splice prevented them from taking appropriate actions to evaluate and correct those causes. This impacts the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations because unidentified deficiencies could lead to similar electrical transients which could cause similar

plant transients and scrams. The inspectors determined the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." The finding was determined to be of very low safety significance (Green) because the finding was a transient initiator and, although the event being evaluated for causal factors caused a reactor scram and loss of mitigation equipment, the failure to identify all the causes of the event and plan appropriate corrective actions has not resulted in a subsequent reactor scram or loss of mitigating equipment. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, because Entergy did not thoroughly evaluate the issue of the manual scram to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, Entergy focused on the causes related to the modification of the feed pump trips and did not fully evaluate the causes related to the failed splice. [P.2]

Inspection Report# : [2014008](#) (pdf)

Significance: G Dec 12, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Complete Several Corrective Actions as Required by Program Requirements

The inspectors identified a Green finding for Entergy's failure to identify and correct conditions adverse to quality by implementing adequate and timely actions to address similar conditions. Specifically, inspectors identified multiple examples of failure to implement the corrective actions in accordance with CAP requirements which resulted in failing to identify and correct several conditions adverse to quality. Two of the finding examples also involved a NCV of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action." Entergy's immediate corrective actions included entering the issues into their CAP as CR-PNP-2014-5909, CR-PNP-2014-5976; CR-PNP-2014-5977, CR-PNP-2014-5682, CR-PNP-2014-5625, CR-PNP-2014-5826, CRPNP-2014-5735, and CR-PNP-2014-06067. Additionally, Entergy took action to address the conditions adverse to quality by revising procedures and specifying additional procedure reviews to identify and correct other conditions adverse to quality.

The failure to implement CAP procedural requirements with respect to corrective action response and documentation was a performance deficiency. This finding was determined to be more than minor because it was similar to IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," example 3.j in that it represents a significant programmatic deficiency that could lead to worse errors if uncorrected. Specifically, if left uncorrected this issue would have the potential to lead to a more significant safety concern because not following an established process for completing corrective actions could result in a failure to identify and correct conditions adverse to quality or other adverse conditions. Additionally, this performance deficiency affects the procedure quality, equipment performance, and human performance attributes of the Initiating Events cornerstone, and impacts the objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, a severe weather procedure did not prescribe sufficient actions that would limit the likelihood of ice bridging or place the plant in a condition that it could respond to a loss of offsite power (LOOP) without potentially upsetting plant stability, and the failure to conduct insulator testing prevented the station from assessing its replacement strategy. Additionally, several surveillance procedures did not provide sufficient barriers (e.g. critical step annotation, test equipment verification, etc.) in accordance with the station programs to limit the likelihood of scrams and other transients during testing.

The inspectors determined the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." The finding was determined to be of very low safety significance (Green) because the failure to implement corrective actions has not resulted in a subsequent reactor scram or loss of mitigating equipment. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Resolution, because Entergy did not take effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, corrective actions were not completed in accordance with

Entergy's CAP and, in some cases, after identification of unsatisfactory closure by Entergy, follow-up actions were inadequate to resolve the deficiencies. [P.3]

Inspection Report# : [2014008](#) (*pdf*)

Significance: **W** Jul 01, 2014

Identified By: NRC

Item Type: FIN Finding

Parallel White Unplanned Scrams with Complications PI Finding

The NRC assigned two parallel White PI inspection findings involving a significant weakness identified in Entergy's causal evaluation and corrective actions for the White Unplanned Scrams with Complications PI.

In accordance with IP 95002 and NRC IMC 0305, "Operating Reactor Assessment Program," parallel PI inspection findings are assigned the same safety significance as the initiating PIs. This parallel PI inspection finding provides for additional NRC review of Entergy's actions to address the weaknesses identified in this report. This finding takes the color (White) of the PI. The parallel inspection finding associated with the White Unplanned Scrams with Complications PI will take effect in the 3rd quarter of 2014, which is the quarter the White PI was no longer considered an Action Matrix input in accordance with Section 11.02.b of IMC 0305, "Operating Reactor Assessment Program."

Inspection Report# : [2014008](#) (*pdf*)

Significance: **W** Jan 01, 2014

Identified By: NRC

Item Type: FIN Finding

Parallel White Unplanned Scrams per 7000 Critical Hours PI Finding

The NRC assigned a parallel White PI inspection findings involving a significant weakness identified in Entergy's causal evaluation and corrective actions for the White Unplanned Scrams per 7000 Critical Hours PIs.

In accordance with IP 95002 and NRC IMC 0305, "Operating Reactor Assessment Program," parallel PI inspection findings are assigned the same safety significance as the initiating PIs. This parallel PI inspection findings provides for additional NRC review of Entergy's actions to address the weaknesses identified in this report. This finding takes the color (White) of the PIs. The parallel inspection finding associated with the White Unplanned Scrams per 7000 Critical Hours PI will take effect in the 1st quarter of 2014, which is the quarter the White PI was no longer considered an Action Matrix input in accordance with Section 11.02.b of IMC 0305, "Operating Reactor Assessment Program."

Inspection Report# : [2014008](#) (*pdf*)

Mitigating Systems

Significance: **G** Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Operability Determination for the X-107B EDG Results in TS Violation

Green. The inspectors identified a Green NCV of TS 3.5.F, "Minimum Low Pressure Cooling and Diesel Generator

Availability,” was identified for Entergy’s failure to perform TS SR 4.5.F.1 to determine that the X-107A EDG was not inoperable due to a common cause failure, or to perform the TS-specified EDG monthly surveillance test, within 24 hours of the time that operators should reasonably have determined that the X-107B EDG should be considered inoperable. Specifically, after engine coolant had been observed spraying from one of the open cylinder test cocks during X-107B EDG pre-start checks, operators determined that the EDG remained operable because the volume of leakage that had been observed would not have precluded a successful start of the engine. Operators did not consider that potential sources of leakage, such as a crack in the cylinder or cylinder head, could reasonably worsen during operation, such that the engine would not be able to complete its 30-day mission time, and therefore should be declared inoperable. Entergy’s immediate corrective actions included replacement of the X-107B EDG 9L cylinder head and sending out the damaged cylinder head for analysis by a vendor. The completion of the analysis by the vendor is being tracked by CR-2015-2109.

The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the operability of the X-107A EDG was not verified, either through determination that it was not inoperable due to a common cause failure or through performance of the monthly TS-required surveillance, nor was availability of the offsite power sources verified through verification of correct breaker alignment and indicated power availability. This finding was evaluated in accordance with IMC 0609.04, “Initial Characterization of Findings,” and Exhibit 2 of IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” the inspectors determined that this finding was of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, did not represent actual loss of a safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. This finding had a cross-cutting aspect in the area of Problem Identification, Evaluation, because Entergy staff did not thoroughly evaluate the issue to ensure that resolutions address the cause and extent of condition commensurate with the issues safety significance. Specifically, Entergy staff failed to thoroughly evaluate the X-107B EDG 9L cylinder head crack through the operability determination process and thus ensure actions of TS 3.5.F were followed. The evaluation failed to consider the 30 day mission time associated with the design basis of the EDG and did not recognize that the condition would likely worsen during EDG operation through cooling water leaking into the lubrication oil system. (P.2)

Inspection Report# : [2015002](#) (pdf)

Significance:  Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform Testing of Safety-Related Undervoltage Alarm Relays

The inspectors identified an NCV of very low safety significance (Green) of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” because Entergy did not establish requirements in accordance with their test program for safety related 4160 V degraded voltage relays in accordance with Updated Final Safety Analysis Report (UFSAR) Section 8.4.7. Specifically, 4160V switchgear relays 127-509/1 & 2 undervoltage setpoints were not tested for the first time until March 2015, which identified the relays were out of calibration by 23 percent. This impacted operators ability to perform alarm response procedure, ARP-C3L, which directs operators to trip the X107A emergency diesel generator (EDG) when the alarm for relay 127-509/1 & 2 is received. Entergy entered CR-PNP-2015-1614 and CR-PNP-2015-1623 into the corrective action program (CAP) to address the degraded condition. Corrective actions included an immediate operability determination and re-calibration of the relays to their required set points prior to restoration of the X107A EDG.

This finding is more than minor because it impacted the equipment performance attribute of the Mitigating Systems

cornerstone and adversely affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Additionally, the finding is similar to example 1.a in Appendix E of IMC 0612, because no record of testing had ever been recorded or performed; and that testing in 2015 determined that relays 127-509/1 & 2 were degraded and would have impacted the operators ability to take alarm response procedure actions. In accordance with IMC 0609 Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," and Exhibit 2 of IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors determined that the finding was of very low safety significance (Green) because it did not represent a loss of a safety system, did not represent a loss of a safety function of a system or a single train greater than its allowed outage time, and did not screen as potentially risk significant due to external events. Specifically, although testing was not being performed to ensure proper relay response, inspectors confirmed relay protection was available to ensure that at a minimum ECCS injection valves would not have been impacted if the X107A EDG voltage regulator failed during a LOOP/LOCA. This finding had a cross-cutting aspect in the area of problem identification and resolution related to identification because Entergy did not implement the CAP with a low threshold for identifying issues. Specifically, Entergy had multiple opportunities to identify that relays 127-509/1 & 2 undervoltage dropout settings were not being tested during establishment of the test setup or through periodic trending against similar relays in other systems [P.1].

Inspection Report# : [2015001](#) (*pdf*)

Significance:  Mar 20, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Past Operability Assessment of 'C' Safety Relief Valve

The team identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when Entergy staff performed an inadequate past operability determination that assessed performance of the 'C' safety/relief valve (SRV), which did not open as expected when called upon to function. Specifically, following the January 27, 2015 reactor scram, operators placed an open demand for the 'C' SRV twice during post-scram recovery operations, but the valve did not respond as expected and did not perform its pressure reduction function on both occasions. Entergy's subsequent past operability assessment for the valve's operation incorrectly concluded that the valve was fully capable of performing its required functions during its installed service. In response to the team's past operability concerns, Entergy subsequently re-evaluated the past operability of 'C' SRV and concluded that it was inoperable and placed the issue into the corrective action program (CAP) as CR-PNP-2015-02051.

The team determined the failure to adequately assess past operability of the 'C' SRV was a performance deficiency that was reasonably within Entergy's ability to foresee and correct. This NRC-identified performance deficiency is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent core damage. The team evaluated the finding using IMC 0609, Appendix 0609.04, "Initial Characterization of Findings," which directed the use of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." Using Exhibit 2, "Mitigating Systems Screening Questions," of IMC 0609, Appendix A, the team determined this finding was not a design or qualification deficiency and was not a potential or actual loss of system or safety function, and was therefore of very low safety significance (Green).

The finding had a cross-cutting aspect in Human Performance, Conservative Bias, because Entergy did not use decision making practices that emphasized prudent choices over those that are simply allowable. Specifically, Entergy did not appropriately evaluate unexpected and unsatisfactory performance of the 'C' SRV in consideration of the entire pressure range that the SRV, including its automatic depressurization system (ADS) function, was required to be operable [H.14].

Inspection Report# : [2015007](#) (pdf)

Significance: TBD Mar 20, 2015

Identified By: Self-Revealing

Item Type: AV Apparent Violation

Failure to Identify, Evaluate, and Correct 'A' SRV Failure to Open Upon Manual Actuation

A self-revealing preliminary White finding and Apparent Violation (AV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," and Technical Specification (TS) 3.5.E, "Automatic Depressurization System," was identified for the failure to identify, evaluate, and correct a significant condition adverse to quality associated with the 'A' SRV. Specifically, Entergy failed to identify, evaluate, and correct the 'A' SRV's failure to open upon manual actuation during a plant cooldown on February 9, 2013. In addition, the failure to take actions to preclude repetition resulted in the 'C' SRV failing to open due to a similar cause following the January 27, 2015, LOOP event. Entergy entered this issue in to the corrective action program (CAP) as CR-PNP-2015-01983, CR-PNP-2015-00561, and CR-PNP-2015-01520. Immediate corrective actions included replacing the 'A' and 'C' SRVs and completing a detailed operability analysis of the installed SRVs which concluded that a reasonable assurance of operability existed.

Entergy's failure to identify, evaluate, and correct the condition of the 'A' SRV's failure to open upon manual actuation during a plant cooldown on February 9, 2013, was a performance deficiency. In addition, the failure to take actions to preclude repetition resulted in the 'C' SRV failing to open due to a similar cause following the January 27, 2015 LOOP event. The self-revealing finding was within Entergy's ability to foresee and correct because indications were available to determine that the 'A' SRV valve did not open upon manual actuation. This was discovered as a result of an extent of condition review of the 'C' SRV failing to open upon manual actuation following the January 27, 2015 LOOP event. This performance deficiency is more than minor because it could reasonably be viewed as a precursor to a significant event if two of the four SRVs failed to open when demanded to depressurize the reactor, following the failure of high pressure injection systems or torus cooling, to allow low pressure injection systems to maintain reactor coolant system inventory following certain initiating events. In addition, it is associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

The inspectors screened this issue for safety significance in accordance with IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," issued June 19, 2012. The screening determined that a detailed risk evaluation was required because it was assumed that for a year period, two of the four SRVs were in a degraded state such that they potentially would not have functioned to open at some pressure lower than rated pressure and would not fulfill their safety function for greater than the TS allowed outage time. Specifically, the assumptions of failures to open were based on: a failed actual opening demand at 200 psig reactor pressure on January 27, 2015, for the 'C' SRV; examination of the valve internals at the testing vendor (National Technical Systems); and a previous failed actual opening demand at 114 psig reactor pressure on February 9, 2013, for the 'A' SRV.

The staff determined that there wasn't an existing SDP risk tool that is suitable to assess the significance of this finding with high confidence, mainly because of the uncertainties associated with: the degradation mechanism and its rate; the range of reactor pressure at which the degraded valves could be assumed to fully function; any potential benefit from an SRV lifting at rated pressure, such that the degradation would be less likely to occur and, therefore, prevent a subsequent failure at low pressure in the near-term; the time based nature of plant transient response relative to when high pressure injection sources fail and the associated impact of reduced decay heat on the SRV depressurization success criteria; and the ability to credit other high pressure sources of water.

Based on the considerations above, the risk evaluation was performed using IMC 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," issued April 12, 2012. The NRC made a preliminary determination that the finding was of low to moderate safety significance (White) based on quantitative and qualitative evaluations. The detailed risk evaluation is contained in Attachment 4 to this report.

This finding does not present a current safety concern because the 'A' and 'C' SRVs were replaced during the outage following the January 27, 2015 LOOP and reactor trip event. Also, Entergy performed a detailed operability analysis of the installed SRVs which concluded that a reasonable assurance of operability existed.

This finding had a cross-cutting aspect in Problem Identification and Resolution, Evaluation, because Entergy did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, Entergy staff did not thoroughly evaluate the operation of the 'A' SRV during the February 9, 2015 plant cooldown and should have reasonably identified that the 'A' SRV did not open upon three manual actuation demands [P.2].

Inspection Report# : [2015007](#) (*pdf*)

Significance:  Mar 20, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Inadequate Loss of Instrument Air Abnormal Operating Procedure

. A self-revealing Green NCV of TS 5.4.1, "Procedures," was identified because Entergy failed to include appropriate operator actions to both recognize the effects of and recover systems and components important to safety within Procedure 5.3.8, "Loss of Instrument Air," abnormal operating procedure. Entergy entered this issue into the CAP as PNP-CR-2015 0888 and issued a revision to Procedure 5.3.8 to provide additional guidance to operators during a loss of instrument air.

The inspectors determined that the level of detail in Procedure 5.3.8, "Loss of Instrument Air," Revision 39, was inadequate to provide appropriate operator guidance to identify and mitigate key events of January 27, 2015. This self-revealing performance deficiency was reasonably within the ability of Entergy personnel to foresee and the issue should have been prevented. The finding was more than minor because it was associated with the procedure quality attribute of the Mitigating System cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesired consequences. The lack of adequate instructions in the procedure adversely affected several operator actions and plant equipment on January 27, 2015, during the LOOP and loss of instrument air.

The team evaluated the finding using IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions." The team determined this finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not result in a loss of function of a TS required system, and did not represent an actual loss of function of one or more non-TS trains of equipment designated as a high safety-significant system.

This finding had a cross-cutting aspect in the area of Human Performance, Resources, because Entergy leaders did not ensure that personnel, equipment, procedures, and other resources were available and adequate to support nuclear safety [H.1].

Inspection Report# : [2015007](#) (*pdf*)

Significance:  Mar 20, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Follow RCIC System Manual Restart Procedure

A self-revealing Green NCV of TS 5.4.1, "Procedures," was identified because the operating crew failed to implement a procedure step to open the reactor core isolation cooling (RCIC) system cooling water supply valve during a manual startup of the system. As a result, the RCIC system was operated for over 2 ½ hours with no cooling water being

supplied to the lubricating oil cooler or to the barometric condenser. Entergy entered the issue into the CAP as CR-PNP-2015-0566, CR-PNP-2015-0570, and CR-PNP-2015-0952 and conducted a human performance review of the Control Room operators involved with the issue.

The inspectors determined that the failure to implement Procedure 5.3.35.1, Attachment 29, “RCIC Injection – Manual Alignment Checklist,” and the Vacuum Tank Pressure Hi Alarm, C904L-F3, alarm response procedure was a performance deficiency and was reasonably within the ability of Entergy personnel to foresee and prevent. This self-revealing finding was more than minor because it was associated with the human performance attribute of the Mitigating System cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesired consequences. Specifically, on January 27, 2015, reactor operators failed to open MO-1301-62, cooling water supply valve, during a manual restart of the RCIC system in accordance with procedure 5.3.35.1, “RCIC Injection – Manual Alignment Checklist.” Additionally, the operating crew failed to identify the valve was out of position even after the Vacuum Tank Pressure Hi Alarm, C904L-F3, was received two minutes after the system was re-started and the alarm response procedure identified “Improper Valve Lineup” as a probable cause.

The team evaluated the finding using IMC 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions.” The team determined this finding was not a design or qualification deficiency and was not a potential or actual loss of system or safety function, and is therefore of very low safety significance (Green). During the period when the RCIC system was operated in this condition, no temperature limits were exceeded. The inspectors noted that in the event of a RCIC system automatic start, the cooling water supply valve would have opened automatically.

This finding had a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because Entergy licensed personnel did not implement procedure 5.3.35.1, “RCIC Injection – Manual Alignment Checklist”, to open MO-1301-62. Additionally, Entergy licensed personnel did not implement the Vacuum Tank Pressure Hi Alarm, C904L-F3, response procedure to check for an improper valve line-up [H.8].

Inspection Report# : [2015007](#) (pdf)

Significance:  Mar 20, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Identify Condition Adverse to Quality Associated with Core Spray Discharge Header Voiding

The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” because PNPS staff failed to identify and correct conditions adverse to quality associated with the partial voiding of the ‘A’ core spray (CS) discharge header on January 27, 2015, following the loss of the keepfill system due to a LOOP. PNPS entered the issue into the CAP as CR-PNP-2015-01406 and planned procedural changes that would provide guidance to operate the affected pumps in order to prevent pump discharge piping from voiding if keepfill pressure is lost.

The failure to identify, evaluate, and correct the ‘A’ CS discharge header partial voiding following loss of keepfill on January 27, 2015, is a performance deficiency that was within Entergy’s ability to foresee and correct. Because the issue was not entered into the CAP, the condition was neither evaluated nor was corrective action taken or planned. This NRC- identified issue is more than minor because it is associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” to IMC 0609, “Significance Determination Process.” This finding was determined to be of very low safety significance (Green) because it was not a deficiency affecting the design or qualification of a mitigating system and did not represent an actual loss of at least a single train system or two separate safety systems for greater than the TS allowed outage time.

The finding had a cross-cutting aspect in Problem Identification and Resolution, Identification, because PNPS personnel did not implement a CAP with a low threshold for identifying issues. Individuals did not identify the issue completely, accurately, and in a timely manner in accordance with the program [P.1].

Inspection Report# : [2015007](#) (*pdf*)

Barrier Integrity

Significance: N/A Dec 30, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Modification to the Spent Fuel Pool Cask Area without Prior NRC Approval

The inspectors identified a Severity Level IV NCV of 10 CFR Part 50.59 in that Entergy did not obtain a licensee amendment prior to implementing a change to the plant that required a change to Technical Specifications. Specifically, Entergy removed the energy absorbing pad described in TS 4.3.4.b, “Design Features” and FSAR section 10.3.6, “Consequences of a Dropped Fuel Cask” without receiving prior NRC approval. Entergy submitted a LAR supplement to the NRC on September 11, 2014 to remove the energy absorbing pad language from TS, and performed an extent of condition review on previous engineering changes and prohibited placing a cask in the spent fuel pool until receiving NRC approval for a change to TS 4.3.4.b. The issue was entered into the CAP as CR 2014-4109.

The inspectors determined that Entergy did not perform an adequate 10 CFR 50.59 evaluation and obtain a license amendment prior to removing the spent fuel pool energy absorbing pad. The inspectors determined this was a performance deficiency that was within Entergy’s ability to foresee and correct and should have been prevented. Because the issue had the potential to affect the NRC’s ability to perform its regulatory function, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using the Enforcement Manual, the inspectors determined that the violation was a Severity Level IV (a 10 CFR 50.59 violation that resulted in conditions that required NRC approval before implementation) violation. Because this violation involves the traditional enforcement process and does not have an underlying technical violation that would be considered more-than-minor, inspectors did not assign a cross-cutting aspect to this violation in accordance with IMC 0612, Appendix B.

Inspection Report# : [2014005](#) (*pdf*)

Emergency Preparedness

Significance:  Mar 20, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Implement Compensatory Measures for Out-of-Service Emergency Action Level Instrumentation

The inspectors identified a Green NCV of 10 CFR 50.54(q)(2) for failing to follow and maintain an emergency plan that meets the requirements of planning standards 10 CFR 50.47(b) and Appendix E. Specifically, on January 27, 2015, following a loss of instrument air, the indications in the Control Room for Sea Water Bay level were lost, and Entergy did not implement compensatory measures, as directed by an Emergency Plan Implementing Procedure, to determine whether a Sea Water Bay level emergency action level (EAL) threshold had been exceeded. Entergy

entered this issue into the CAP as CR-PNP-2015-00948 and initiated corrective actions to identify alternative means for assessing this EAL in the event of a loss of Sea Water Bay level instruments.

The inspectors determined that Entergy's failure to implement compensatory measures for out-of-service EAL instrumentation was a performance deficiency that was within Entergy's ability to foresee and correct and should have been prevented. Specifically, Entergy did not implement the compensatory measure listed in Attachment 9.2 of EP-IP-100.1, "Emergency Action Levels," Revision 10. The inspectors determined that following a loss of instrument air, the indications for Sea Water Bay level EAL were lost, rendering those EALs ineffective such that Entergy was not able to determine whether a Sea Water Bay level EAL threshold had been exceeded and to declare an emergency based on the Sea Water Bay level. This NRC-identified performance deficiency was more than minor because it was associated with the emergency response organization performance (program elements not meeting 50.47(b) planning standards) attribute of the Emergency Preparedness cornerstone and affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, the out-of-service Sea Water Bay level instrumentation could have led to an emergency not being declared in a timely manner.

The inspectors evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012. The attachment instructs the inspectors to utilize IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process," issued September 23, 2014, when the finding is in the licensee's Emergency Preparedness cornerstone. The inspectors determined the finding was associated with risk significant planning standard 10 CFR 50.47(b)(4), "Emergency Classification System," and corresponded to the following Green Finding example in Table 5.4-1: an EAL has been rendered ineffective such that any Alert or Unusual Event would not be declared, or declared in a degraded manner for a particular off-normal event. Therefore, using Figure 5.4-1, "Significance Determination for Ineffective EALs and Overclassification," and the example in Table 5.4-1, the inspectors determined the finding was of very low safety significance (Green).

The finding had a cross-cutting aspect in the area of Human Performance, Documentation, because Entergy did not maintain complete and accurate documentation. Specifically, compensatory measures associated with out-of-service EAL instrumentation are not governed by comprehensive and high-quality programs, processes, and procedures [H.7].

Inspection Report# : [2015007](#) (pdf)

Significance: N/A Mar 20, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Report a Major Loss of Emergency Assessment Capability

An NRC-identified SL IV NCV of 10 CFR Part 50.72(b)(3)(xiii) was identified when Entergy failed to make a required event notification within eight hours for a major loss of assessment capability. Specifically, an unplanned loss occurred of all emergency action level (EAL) instrumentation associated with Sea Water Bay level that resulted in an inability to evaluate all EALs for an abnormal water level condition. Entergy entered the issue into the corrective action program as CR-PNP-2015-00949. Compliance was restored on February 5, 2015, when Entergy reported the major loss of assessment capability under Event Notification (EN) 50790.

The inspectors determined that Entergy's failure to submit an event notification in accordance with 10 CFR 50.72 within the required time was a performance deficiency that was reasonably within Entergy's ability to foresee and correct, and should have been prevented. Since the failure to submit a required event report impacts the regulatory process, the violation was evaluated using Section 2.2.4 of the NRC's Enforcement Policy, dated July 9, 2013, instead of the SDP. Using the example listed in Section 6.9.d.9, "A licensee fails to make a report required by 10 CFR 50.72 or 10 CFR 50.73," the issue was evaluated and determined to be a SL IV violation. The inspectors reviewed the condition for reactor oversight process significance. Because this NRC-identified violation involves the traditional

enforcement process and does not have an underlying technical violation that would be considered more-than-minor, the inspectors did not assign a cross-cutting aspect to this violation in accordance with IMC 0612.

Inspection Report# : [2015007](#) (*pdf*)

Occupational Radiation Safety

Public Radiation Safety

Significance:  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Conduct Operations to Minimize the Introduction of Residual Radioactivity to the Site

Green. An NRC-identified Green NCV of Title 10 CFR 20.1406(c) was identified in that Entergy did not conduct operations to minimize the introduction of residual radioactivity on site. Entergy did not take action to reduce residual radioactive waste from the site in a timely manner over fourteen years. Entergy entered this issue into the corrective action program as CR-2015-05745 with actions to characterize and evaluate the adverse conditions identified by the inspector

The failure to minimize residual radioactive waste is a performance deficiency within Entergy's ability to foresee and correct, and should have been prevented. Specifically, radioactive waste was not minimized due to Entergy's failure to address long standing issues of radioactive waste from overflow of tanks, drains, and the abandonment of the concentrator resulting in the dispersal of highly radioactive material in those rooms over a fourteen year period. The issue is more than minor because it is associated with the program and process attribute of the Public Radiation Safety cornerstone and affected the cornerstone objective to ensure the licensee's ability to prevent inadvertent release and/or loss of control of licensed material to an unrestricted area. In accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance (Green) because Entergy had an issue involving radioactive material control, but did not involve: (1) transportation; or (2) public exposure in excess of 0.005 Rem. The finding has a cross-cutting aspect in the area of problem identification and resolution, Resolution, in that Entergy did not adequately address the radioactive waste in a fourteen year time period (P.3).

Inspection Report# : [2015002](#) (*pdf*)

Significance:  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Properly Ship Category 2 Radioactive Material - Quantity of Concern

Green. The inspectors identified a Green NCV of 10 CFR 71.5, "Transportation of Licensed Material," and 49 CFR 172, Subpart I, "Safety and Security Plans." Specifically, Entergy shipped a category 2 RAM-QC on public highways to a waste processor without adhering to a transportation security plan. Prior to shipment, Entergy's staff failed to recognize that the quantity of radioactive material met the definition RAM QC. Entergy entered the issue into their corrective action program as CR-2015-05746 to address changes in Department of Transportation requirements.

The issue is more than minor because it is associated with the program and process attribute of the Public Radiation Safety cornerstone and affected the cornerstone objective to ensure the safe transport of radioactive material on public highways in accordance with regulations. The finding was determined to be of very low safety significance (Green) because Entergy had an issue involving transportation of radioactive material, but it did not involve: (1) a radiation limit that was exceeded; (2) a breach of package during transport; (3) a certificate of compliance issue; (4) a low level burial ground nonconformance; or (5) a failure to make notifications or provide emergency information. The finding had a cross-cutting aspect in the area of problem identification and resolution, Identification, in that the licensee did not have a low threshold for identifying issues. Specifically, the security transportation plan requirements became effective in March 2003, had not been effectively identified by Entergy (P.1).

Inspection Report# : [2015002](#) (*pdf*)

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Submit an LER

Severity Level IV: The inspectors identified a Severity Level IV non-cited violation (NCV) because Entergy personnel did not provide a written report to the NRC within 60 days after discovery of the event as required by 10 CFR 50.73(a)(2)(i)(B) for a condition which was prohibited by TS 3.5.E, "Automatic Depressurization System (ADS)." Specifically, on January 27, 2015, Pilgrim experienced a loss of offsite power and reactor scram during a winter storm. While operators performed a reactor cooldown with manual operation of safety relief valves (SRVs), the 3C SRV twice failed to open upon demand by the operations crew. Entergy staff initiated condition report CR-PNP-2015-0561 to document SRV 3C's failure to open, and the valve was immediately declared inoperable. The inspectors determined that the improper operation of SRV 3C was reportable in accordance with 10 CFR 50.73(a)(2)(i)(B). Entergy has captured this issue in condition report CR-2015-6191.

The inspectors determined that Entergy's failure to submit an event notification in accordance with 10 CFR 50.73 within the required time was a performance deficiency that was reasonably within Entergy's ability to foresee and correct, and should have been prevented. Because the issue had the potential to affect the NRC's ability to perform its regulatory function, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.9.d.9 from the Enforcement Policy, the inspectors determined that the violation was a Severity Level IV (a failure of a licensee to make a report required by 10 CFR 50.72 or 10 CFR 50.73) violation. Because this violation involves the traditional enforcement process and does not have an underlying technical violation, inspectors did not assign a cross-cutting aspect to this violation in accordance with IMC 0612, Appendix B.

Inspection Report# : [2015002](#) (*pdf*)

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