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Regulatory Conference
NRC Region III

NRC Emergency Preparedness IR

050000331/2006009

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Agenda

- FPL Energy Presentation – Gary VanMiddlesworth
  - Position on Preliminary Findings and Apparent Violation – G. VanMiddlesworth
  - Drill Scenario – Planned vs Actual – Mike Davis
  - Assessment of SAE Declaration – M. Davis
  - Exercise Critique and Conclusions – M. Davis
  - Results of Cause Evaluation and Corrective Actions – G. VanMiddlesworth
  - Summary – G. VanMiddlesworth
- Closing Remarks – Bill Webster

Apparent Violation

- NRC Emergency Preparedness Inspection Report 050000331/2006009 (DRS)
- Apparent Violation associated with 10 CFR 50.47(b)(14), and Section IV.F.2.g of Appendix E to 10 CFR Part 50

Position on Apparent Violation

- FPL Energy agrees that it failed to critique (generate a CAP/AR) an unexpected scenario sequence
- FPL Energy disagrees that there was a performance weakness associated with a failure to recognize an emergency action level entry condition OR a that there was a performance weakness that led to a delay in classification once conditions for a Site Area Emergency (SAE) were met
  - The SAE declaration was correct and timely based on the actual scenario conditions. the indications that existed during the exercise, the plant's EALs, and industry accepted guidance for classification
- The Apparent Violation and preliminary white finding should be withdrawn

Planned Scenario Up To SAE

- Due to failure of Reactor Protection System (RPS) to initiate an automatic scram with a subsequent successful manual scram, an Alert was declared
- Fuel failure due to power and pressure transient
- Stuck open Safety Relief Valve (SRV) with a cracked Tailpipe
- Containment pressure increases
- Radiation levels in containment increases
- Failure of containment isolation valves – Planned

  T-0

Actual Scenario Sequence

- Alert declared for failure of RPS
- Subsequent recognition that RCS barrier was lost
  - High drywell radiation and pressure from failed SRV tailpipe
- The status of all Drywell and Torus isolation valves were verified as correct and expected
- Operators performed EOP-required Defeats for Nitrogen supply to the Drywell and Drywell cooling
- Control Room initiated Torus spray to reduce pressure - Torus pressure slowly decreased

Actual Scenario Sequence

- At 1050, a bag of tools fell from scaffolding and impacted components of two valves on piping between Torus and Reactor Building
- Control Room valve indications were as follows:
  - CV4304, Torus Vacuum Breaker Isolation Valve, changes from closed to intermediate (green/red or open/closed) – no alarm
  - V43-169, Torus Vacuum Breaker Check Valve, changes from closed to indeterminate (loss of indication or position not known) – no alarm

Actual Scenario Sequence

- 1054, TSC contacted Control Room about an increase in Offgas Stack Radiation Monitor reading (below alarm set point and Unusual Event EAL level)
- 1055, Control Room confirmed increase in reactor building radiation levels and began searching for potential release source (checking indications – no alarm present)
- 1057, Reactor Building Vent Shaft Radiation Monitor alarmed
  - Reading indicates release source is from Reactor Building (time determined from post-event investigation run in simulator)

Actual Scenario Sequence

- 1101, Shift Manager determined that vacuum breaker isolation and check valves are open
  - Determination based on the fact that release is occurring, and therefore a pathway to the environment existed through the vacuum breaker line even though valve position indication was indeterminate for one and intermediate for the other
  - This meets Containment Barrier Loss EAL
  - The actual SAE T-0 Time is 1057 (per FPL Energy EALs & NEI 99-02).
- 1103, Shift Manager notified TSC that both valves are open
- 1111, SAE declared for loss of RCS and Containment Barriers

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Actual Scenario Different Than Developed Scenario

- Torus Vacuum Breaker Valve Position – not recognized in drill until there was indications of a release driven by containment pressure
- Primary Containment Pressure – lower due to operator actions of spraying the Torus
- Reactor Building Vent Shaft Radiation Level alarm was first available indication that the EAL was met

Assessment of SAE Declaration

- The conditions for the Primary Containment Leakage EAL threshold are:
  - Failure of both valves in any one line to close and a downstream pathway to the environment exists
    - Met; definitive indications were available at 1057 and the Shift Manager determined that there was a "Failure of both valves in any one line to close" at 1101
  - Unisolable primary system leakage outside the drywell as indicated by area temps or ARMs exceeding the Max Safe Limits per EOP 3, Table 5, when Containment Isolation is required.
    - Not met; no EOP 3 Max Safe limits were exceeded
  - Primary containment venting per EOPs
    - Not met; Primary containment venting was not required

Assessment of SAE Declaration

- Timeliness of FPL Energy EAL declaration based on NEI 99-02, Rev 4 criteria for assessing classifications
  - "Classification is expected to be made promptly following indication that the conditions have reached an emergency threshold in accordance with the licensee's EAL scheme. With respect to classification of emergencies, the 15 minute goal is a reasonable period of time for assessing and classifying an emergency once indications are available to control room operators that an EAL has been exceeded."

Importance of Accurate EALs/PARs

- The county emergency plans provide protective actions at a Site Area Emergency declaration that result in evacuation of the following:
  - Schools
  - Nursing Homes
  - Group Homes
- Relocation risk to public
- Emergency classification must be correct, based on actual plant conditions, and not made on potential release paths
  - This position is consistent with operating experience

FPL Energy Conclusion

- The exercise scenario incorrectly stated that the SAE classification T-0 was 1050
  - This was the time that the Torus to Reactor Building vacuum breaker valves change state
- The scenario T-0 and declaration time were not consistent with FPL Energy EALs, NEI 99-02, or FPL Energy's expectation for correct classification
- The appropriate EAL entry conditions were available at 1057 and recognized at 1101
  - The Control Room and TSC were aware that a radiological release had begun and that the Loss of Containment EALs required assessment
  - There was focused effort to determine containment isolation valve status to support EAL assessment

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FPL Energy Conclusion

- The correct classification was made in accordance with FPL Energy EALs
  - The valve indications available to the operators at 1050 did not meet the threshold for a Loss of Containment EAL in that indications were not conclusive to determine that a failure of both valves in one line to close existed
  - Due to relocation risk to the public, classification should not be made on a potential release path
- The classification was timely in accordance with guidance of NEI 99-02

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Exercise Critique Process

- The difference in the SAE declaration timeline (planned vs. actual) was recognized and discussed by controllers during the exercise
- Issue was subsequently reviewed by management
- Reviews determined that the scenario expected timeline was incorrect, and that the actual SAE declaration was correct and timely
- The reviews/discussions of the SAE declaration that occurred following the exercise were essentially an evaluation of the unexpected sequence
- No CAP/AR was initiated to document the unexpected sequence of the SAE declaration
- A CAP/AR was generated subsequent to the NRC inspection exit

Preliminary Results of Cause Analysis

- FPL Energy reviewed situation:
  - The processes as described by EP procedures do not clearly drive the determination of whether a weakness exists in a Risk Significant Planning Standard
  - Scenario development guidance does not ensure a quality, reviewed and approved scenario is used to conduct drills and exercises

Corrective Actions

- Entered in Corrective Action Program (CAP 44942) on 10/19/06
- Revised EPDM 1008, *Emergency Response Drill and Exercise Program* to:
  - Provide direction that a CAP shall be initiated for any deviation in ERO performance from the exercise scenario expectations associated with a RSPS
  - Change the exercise critique process to be more complete and thorough critiques of ERO performance

Corrective Actions

- Revised EPDM 1010, *EP Department Performance Indicators (PI's)*, to ensure DEP process is completed prior to declaring success or failure of opportunities
  - Any evaluation prior to completion of the process shall be clearly marked as "preliminary"

Summary

- FPL Energy failed to generate a CAP/AR for an unexpected sequence
- FPL Energy identified weaknesses in the scenario development and validation process
- FPL Energy identified that there is a weakness in how scenario differences are identified and entered as a CAP/AR

Summary

+ The Site Area Emergency declaration was correct and timely, based on the actual conditions during the exercise
  - Indications of a pathway to the environment did not exist until 1057 - declarations should not be made based on potential pathways
  - Failure of the simulator crew to identify the failed valves at 1050 did not lead to a failure to classify
+ Control Room crew performed well during the scenario
+ Emergency Response Organization effectively supported Control Room crew and communicated with State and County representatives to protect the health and safety of the public

Summary

- Corrective actions taken will assure that scenario sequence differences will be properly critiqued in the future
- FPL Energy will not perform EP Drills until all corrective actions are complete (Root Cause CAs pending)
- FPL Energy has every confidence that Emergency Plan and its implementation will protect the public health and safety