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Date: October 30, 2006

SUBJECT: Beaver Valley White Paper

### **NRC Item 2006009-01 Review**

NRC Inspection Report 2006009 documented the following Preliminary White finding:

Preliminary White. The inspector identified an apparent violation for the licensee's failure to provide adequate corrective actions to a previously-identified emergency preparedness exercise weakness. 10 CFR 50, Appendix E, Section IV.F.2.g, requires that any emergency preparedness weakness or deficiency that is identified shall be corrected. An apparent violation of that requirement was identified involving the licensee's failure to adequately correct a performance deficiency in the area of Protective Action Recommendation development identified by the NRC in the May 2004 evaluated exercise. Specifically, in the 2006 exercise, the licensee dose assessment team did not adequately consider plant-specific situational information to develop the best dose projection estimate achievable at the time, which was an apparent repeat of a problem exhibited in the 2004 exercise. The licensee's 2006 performance regarding the development of a dose projection without a sound technical basis demonstrated that the licensee had implemented ineffective corrective actions for the 2004 inspection finding.

The NRC "choice letter" provided the opportunity for FENOC to request a regulatory conference to present the NRC with FENOC's perspective on the facts and assumptions used by the NRC to arrive at the preliminary finding. FENOC requested a regulatory conference and the meeting was held on October 24, 2006. During this meeting FENOC provided additional information to the NRC regarding FENOC's corrective actions in response to the 2004 exercise finding and Emergency Response Organization (ERO) communications and the basis for the dose assessment during the 2006 exercise.

FENOC stated that the 2004 deficiency was primarily caused by a communication problem during the 2004 exercise in that dose assessment personnel were unaware of degraded containment spray capability even though key players in the ERO were aware of this information. Actions taken by FENOC to address the communication problem included; revising the offsite protective action recommendation flowchart to add provisions to ensure consideration of plant conditions important to dose projection, reviewing the Condition Report associated with the 2004 exercise finding as internal operating experience in ERO training, training applicable ERO staff on the offsite protective action

procedure changes, revising operations training scenarios to include delayed failures of equipment and the need to promote communication of equipment status to the ERO and conducting ERO drills which emphasized communication of plant conditions and effects on emergency response parameters which included dose assessment.

FENOC personnel who were the Assistant Emergency Recovery Manager and the Environmental Assessment & Dose Projection (EA&DP) Coordinator during the 2006 evaluated exercise reviewed exercise timeline, associated dose projections and discussed the communications within the ERO during the exercise. The information presented focused on the information known to the exercise players during the development of the dose projections and that the EA&DP coordinator was aware of relevant plant conditions and that dose projection procedures were followed properly. Most importantly, the Protective Action Recommendations (PARs) developed were appropriate for plant conditions (Reactor core remained covered and subcooled throughout the exercise) and would not have changed even if several additional hours were added to the release duration. Based on the exercise review FENOC concluded that; there was good communications between the control room, Technical Support Center and Emergency Response Facility, EA&DP personnel were apprised of and sought out the best available information about the release and estimates for isolation as part of the dose assessment, EA&DP personnel were sensitive to the release duration and provided information to offsite response organizations as soon as practical and that the dose assessment was performed properly in accordance with the procedural requirements.

Based on the above, FENOC concluded there is no evidence of a repeat of the weaknesses identified in the 2004 exercise as there was not a failure to communicate important information to EA&DP for dose assessment.

During the regulatory conference the NRC sought to understand the new information presented by FENOC and asked probing questions to ensure a complete understanding. Based on the discussion during the regulatory conference, FENOC believes that as a result of the NRC observation of the 2006 exercise, the NRC has identified a new WEAKNESS regarding the use of a one hour release time when the release duration is unknown. When the release duration is unknown, the use of a release duration greater than one hour may likely be more representative of the time that it would take to identify and isolate the release.

After consideration of the above, FENOC agrees consideration of the use of a release duration of greater than one hour is appropriate. This issue has been documented in the FENOC correction action program as Condition Report 06-9066. Short term changes planned include revising procedures and training to stress importance of obtaining the best estimate duration of a release from the Technical Support Center (TSC) and for TSC personnel to provide realistic time

estimates for release durations based on plant conditions and expected challenges. Longer term action planned is to revise the one hour period for unknown release duration to more closely align with industry practice (prior NRC approval is expected prior to implementation).

### Significance Determination Process Review

The following provides an evaluation of the WEAKNESS regarding use of a one hour release duration when the release duration is unknown using the NRC Emergency Preparedness Significance Determination Process. Note, WEAKNESS is a defined term in the EP SDP:

**WEAKNESS:** As applied to emergency preparedness, a WEAKNESS is a level of performance demonstrated during a drill or exercise that could have precluded effective implementation of the Emergency Plan in the event of an actual emergency. WEAKNESSES are not confined to performance problems that result in a LOSS OF PS FUNCTION. For example, an inaccurate or untimely classification, notification, or Protective Action Recommendation (PAR) development is a WEAKNESS associated with an RSPS (i.e., a Drill and Exercise Performance (DEP) PI opportunity failure). However, a WEAKNESS also exists if a performance problem occurs associated with an accurate and/or timely classification, notification or PAR development that was anticipated by the scenario (i.e., a DEP PI successful opportunity). For instance, a correct classification may have been made based on misinformation, lack of information or invalid indicators. The NRC staff expects licensees to identify and critique this performance problem as a WEAKNESS associated with an RSPS. Thus, if the licensee's CRITIQUE fails to identify a performance problem associated with the process of classification, notification, or PAR development, even though it may have been determined to be a successful DEP PI opportunity per the scenario, the performance problem is a LOSS OF PS FUNCTION 10 CFR 50.47(b)(14). However, since it was a successful PI opportunity and did not affect the outcome of protecting the health and safety of the public, its significance warrants a green finding. Failure to correct a WEAKNESS should be analyzed against the compliance criteria in PLANNING STANDARD 10 CFR 50.47(b)(14) and the Emergency Plan. A failure to identify and/or correct a WEAKNESS associated with an RSPS FUNCTION represents a LOSS OF PS FUNCTION 10 CFR 50.47(b)(14) function for which Section 5.0 of this appendix provides guidance regarding the correction of WEAKNESSES. For purposes of this SDP, this includes a deficiency, as the term is used in PLANNING STANDARD 10CFR50.47(b)(14) and Section IV.F.2.g of Appendix E to 10 CFR Part 50.

As this issue did not involve an actual event, Sheet 2 "Actual Event Implementation Problem" is not applicable and Sheet 1 "Failure to Comply" is used. The first decision block on Sheet 1 is PS Problem? The answer is YES as this WEAKNESS needs evaluated under two Planning Standards (PS). The two PS are 10 CFR50.47(b)(9) and 10 CFR50.47(b)(14).

### **10 CFR 50.47(b)(9)**

From the EP SDP, the RSPS FUNCTION is:

- Methods, systems and equipment for assessment of radioactive releases are in use

As this WEAKNESS is related to dose projection, it is related to the Risk Significant Planning Standard 10 CFR50.47(b)(9). The examples provided in the EP SDP for this RSPS were reviewed and none of the examples provided are applicable as they do not address a WEAKNESS in this area. Attachment 1 provides a review of each EP SDP example for 10 CFR50.47(b)(9).

### **10 CFR 50.47(b)(14)**

From the EP SDP, the PS FUNCTIONS are:

- A drill and exercise program (including radiological, medical, Health Physics, etc.) is established.
- Full-scale drills and exercises are assessed via a formal CRITIQUE process in order to identify WEAKNESSES associated with an RSPS.
- Identified RSPS WEAKNESSES are corrected.

As this WEAKNESS was identified as a result of a full scale exercise, the second bulleted item is applicable. Referring to Sheet 1 of the EP SDP, The second decision block is RSPS Problem? Based on the above, the answer is NO, as a WEAKNESS identified from a drill or exercise is addressed under 10 CFR50.47(b)(14) which is not a RSPS problem. Note, this is the path taken in the NRC assessment of the WEAKNESS documented in NRC Inspection Report 2006009.

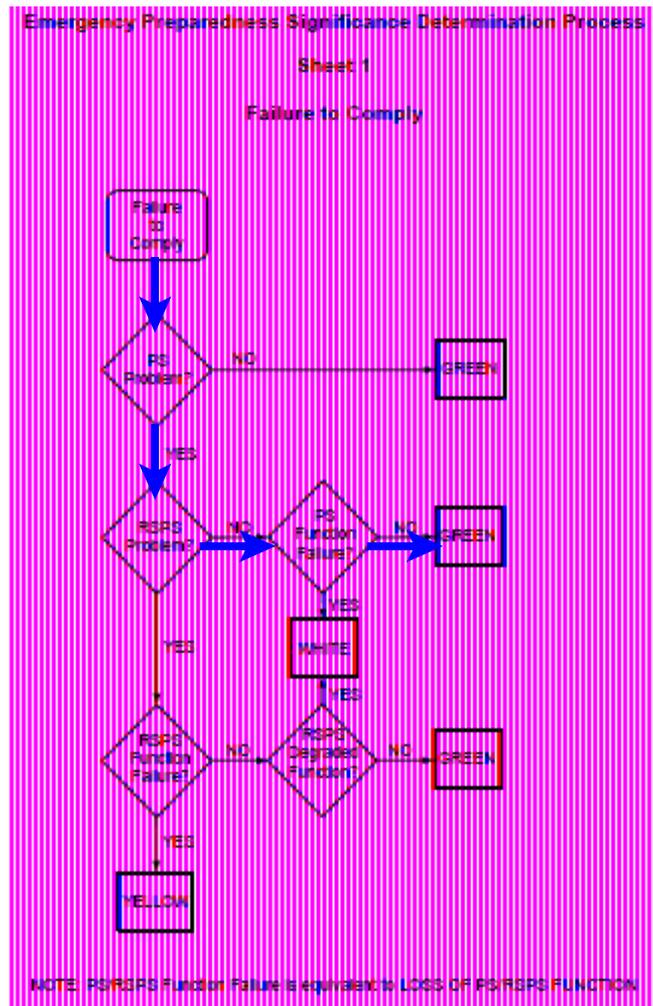
The next decision block is PS Function Failure? The relevant facts to assess this WEAKNESS are:

- The WEAKNESS was identified by the NRC, so the drill or critique process did NOT properly identify the WEAKNESS.
- The WEAKNESS resulted from a performance problem associated with RSPS 10 CFR50.47(b)(9)
- 10 CFR50.47(b)(9) is a RSPS area that is not covered by the DEP Performance Indicator
- This WEAKNESS is not a repeat of the 2004 exercise weakness

Using the examples provided in the EP SDP for this planning standard, the applicable example is:

- The drill and exercise critique process does not properly identify a WEAKNESS resulting from a performance problem associated with RSPS 10 CFR 50.47(b)(9).

Per the EP SDP, this is an example of a Green Finding. Attachment 2 provides a review of each EP SDP example for 10 CFR50.47(b)(14).



**Attachment 1**  
**Review of EP SDP Guidance for PS 10 CRF50.47(b)(9)**

Examples of loss of RSPS FUNCTION (yellow finding) include –

- Methods are inadequate (e.g., do not conform with RG 1.3 or 1.4 or are not technically justifiable) to estimate the source term and/or project offsite doses resulting from a radioactive release. **(Not Applicable methods to estimate source term and project offsite doses were adequate)**
- Equipment or systems necessary for dose projection are not functional for longer than 24 hours from the TIME OF DISCOVERY, to the extent that the licensee has no capability for immediate dose projection. **(Not Applicable)**
- Changes have been made to dose projection systems (e.g., software) that result in loss of all dose assessment capability through failure of software, significant systematic errors (i.e., not attributable to normal uncertainty in the process), or loss of input parameter capability (e.g., meteorological input is erroneous), and the condition exists for more than 24 hours from the TIME OF DISCOVERY, without compensatory measures. **(Not Applicable)**

Examples of a DEGRADATION OF THE RSPS FUNCTION (white finding) include –

- The field monitoring function (at least dose rate measurement and iodine presence determination) is unavailable for more than 72 hours from the TIME OF DISCOVERY without compensatory measures. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.) or planned outage, compensatory measures are acceptable while repair activities proceed with high priority. longer than 24 hours from the TIME OF DISCOVERY, to the extent that the licensee has no capability for immediate dose projection in facility emergency response centers as committed to in the Plan. **(Not Applicable)**

Examples of a green finding include –

- Equipment or systems necessary for dose projection are not functional for longer than 24 hours from the TIME OF DISCOVERY without compensatory measures, or corrective actions are inadequate or delayed. **(Not Applicable)**
- The field monitoring function IAW the Plan is unavailable for more than 72 hours from the TIME OF DISCOVERY, without compensatory measures. In the event of major disruptive events (e.g., hurricane, fire, explosion, loss of power, etc.) or planned outage, compensatory measures are acceptable while repair activities proceed with high priority. **(Not Applicable)**

Examples that do not rise to the level of a finding include –

Dose projection equipment/systems or field monitoring capability is not functional as committed in the Plan, for a period less than 24 or 72 hours from the TIME OF DISCOVERY, respectively. **(Not Applicable)**

**Attachment 2**  
**Review of EP SDP Guidance for PS 10 CRF50.47(b)(14)**

Examples of LOSS OF PS FUNCTION (white finding) include –

- More than two drills and/or exercises (excluding the biennial exercise) during the INSPECTION CYCLE (e.g., radiological, medical, HP, etc.) have not been conducted IAW the Plan. **(Not Applicable)**
- A biennial exercise is not conducted during a 2-year (calendar) period without receiving an exemption. **(Not Applicable)**
- Biennial exercises are not sufficiently varied to ensure that all RSPS PROGRAM ELEMENTS are tested within a 6-year period. **(Not Applicable)**
- The drill and exercise CRITIQUE process does not properly identify a WEAKNESS associated with an RSPS that is determined to be a DEP PI opportunity failure during a FULL-SCALE DRILL OR EXERCISE. (See Section 4.14.2, Guidance on Drill and Exercise Critique Problems) **(Not Applicable, WEAKNESS is associated with RSPS 10 CFR 50.47(b)(9) which is an RSPS area not covered by the DEP PI)**
- Formal CRITIQUES are not conducted for more than two scheduled drills and/or exercises during the INSPECTION CYCLE. **(Not Applicable)**
- The licensee failed to correct an RSPS WEAKNESS. (See Section 5.0, Corrective Actions) **(Not Applicable, per the information presented at the Regulatory Conference, this WEAKNESS is not a repeat of the 2004 exercise weakness and actions taken for the 2004 weakness were adequate to correct the communications problem that was cause of 2004 weakness.**

Examples of a green finding include –

- A drill has not been conducted during the INSPECTION CYCLE IAW the Plan. **(Not Applicable)**
- The biennial exercise is not technically accurate and/or challenging, to the extent that it does not adequately test the plans, procedures, equipment, and implementation of the licensee's emergency response capabilities. **(Not Applicable)**
- Biennial exercises are not sufficiently varied to ensure that all PS PROGRAM ELEMENTS are tested within a 6-year period. **(Not Applicable)**
- The drill and exercise CRITIQUE process does not identify a WEAKNESS associated with a non-RSPS during a FULL-SCALE DRILL OR EXERCISE or any PS WEAKNESS during a limited facility interaction drill where there is a limited team of evaluators (e.g., facility table-top training drill, operator training simulator drill, individual facility training drill). (See Section 4.14.2, Guidance on Drill and Exercise Critique Problems) **(Not Applicable)**

- The drill and exercise critique process does not identify a WEAKNESS as a result of a performance problem associated with a RSPS that is determined as a DEP PI successful opportunity, during a FULL SCALE DRILL OR EXERCISE. (See Section 4.14.2, Guidance on Drill and Exercise Critique Problems) **(Not Applicable, WEAKNESS is associated with RSPS 10 CFR 50.47(b)(9) which is an RSPS area not covered by the DEP PI. Note, in the 2006 exercise, the PAR was considered as successful DEP PI opportunity, however, timeliness of upgraded PAR development was an unsuccessful DEP PI opportunity that was identified in the critique)**
- The drill and exercise critique process does not properly identify a WEAKNESS resulting from a performance problem associated with RSPS 10 CFR 50.47(b)(9). **(Applicable, WEAKNESS was not identified during critique process and was associated with RSPS 10 CFR50.47(b)(9))**
- The licensee failed to correct a non-RSPS WEAKNESS. (See Section 5.0, Corrective Actions) **(Not Applicable)**

Examples that do not rise to the level of a finding include –

- A drill is rescheduled or cancelled, but the program remains compliant with the Plan. **(Not Applicable)**
- A drill or exercise has not been conducted IAW the Plan as a result of extenuating circumstances that the licensee has self-identified and appropriately rescheduled with NRC approval. **(Not Applicable)**