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Good morning Booma,

I am providing you with our written comments on First Energy Nuclear Operating Company's proposed amendment to revise the current Beaver Valley Power Station Emergency Plan emergency action level scheme to adopt the NEI-99-01 EALs, Revision 6. The only comment we have pertains to the proposed removal of EAL HG1.

We appreciate the opportunity to provide input into the NRC review and approval process.

If you have any questions or need additional information, please call me or Larry Winker of my staff. Larry is the Nuclear Safety Specialist assigned to Beaver Valley.

Regards,

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The Pennsylvania Bureau of Radiation Protection (BRP) is providing comments regarding the First Energy Nuclear Operating Company's (FENOC) proposed amendment to revise the current Beaver Valley Power Station (BVPS) Emergency Plan emergency action level (EAL) scheme to adopt the NEI 99-01, Revision 6, guidance.

The proposed BVPS EALs contain two "deviations" from the NEI EALs. One of the deviations involves the removal of EAL HG1. The basis for this removal is in Table 3 of the proposed amendment and cites Emergency Plan Frequently Asked Questions, EPFAQ 2015-013. It states there are several EALs that are redundant with EAL HG1 and are better suited to ensure timely and effective emergency declarations. It also states the development of new spent fuel pool level EALs, clarifies the intended emergency classification level for spent fuel pool level events.

The BRP conducted a careful review of EPFAQ 2015-013 and the proposed amendment for BVPS dated September 28, 2016, "Request for Licensing Action to Revise the Emergency Plan". BRP expressed concerns about the elimination of EAL HG1 at a conference call with the NRC staff on August 7, 2017 followed by a conference call with the representatives of FENOC on August 9, 2017. There are several reasons for BRP concerns with the elimination of EAL HG1.

There are only two Hostile Action Based (HAB) EALs at a General Emergency (GE) classification that address "**loss of physical control of the facility**"; HG1 and HG7. If EAL HG1 is removed, BRP would not consider EAL HG7 to be bounding because this EAL relies heavily on the judgement of the emergency director and, therefore, it is very subjective. BRP believes that removal of HG1 and relying on HG7 at a GE condition with "**loss of physical control of the facility**", could result in unintended consequences and perhaps a disproportionate response on the part of the licensee and the State.

With respect to prior industry experiences, such as declaration of a GE unnecessarily or conservatively during HAB drills and exercises, BRP participated in at least ten HAB drill and exercises and several tabletops with the five PA nuclear power plant sites. None of the drills and exercises resulted in a premature declaration of a GE and/or an overly conservative protective action recommendation (PAR) on the part of the licensees. Only one HAB exercise, involving the spent fuel pool scenario, resulted in an overly conservative PAR by the State. This was caused by the failure of the licensee to provide the BRP with the information, in a timely manner, regarding fuel pool storage to perform radiological dose assessment.

The industry's explanation for the removal of EAL HG1 based on the redundant nature of this EAL is not justifiable. The concept of defense-in-depth (DID) has been used in commercial nuclear industry since its inception and redundancy is a key component of DID. The EAL HG1 is unique relative to all other security based EALs because it highlights a HAB with "**loss of physical control of the facility**"; it includes both components the "reactor" as well as "spent fuel"; and contrary to HG7, it clearly identifies conditions that would warrant a GE declaration as indicated in part 2.a, "reactor safety functions cannot be controlled or maintained". With respect to part 2.b, "damage to spent fuel scenario", BRP recommends the addition of RG2 emergency action levels under part 2.b. This modification will improve the clarity of this EAL. It will also enhance the decision-making process under an extremely stressful situation and a rapidly progressing nature of a HAB event. BRP does not believe the addition of the symptom-based thresholds in the fission product barrier tables, as suggested by the Nuclear Energy Institute (NEI) in EPFAQ 2015-013, is useful for EAL HG1. In practice, if a HAB event involves "**loss of physical control of the facility**", with indications that any of the safety functions (reactivity control, core

cooling and RCS heat removal) cannot be controlled or maintained, the State will likely take protective action measures immediately rather than waiting for the confirmation of the loss or potential loss of the fuel clad barrier. In EPFAQ 2015-013, the NEI recommends two solutions for dealing with EAL HG1. BRP concurs with the solution to modify this EAL and not the removal of it.