



EA-12-049

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U.S. Nuclear Regulatory Commission
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- References:
1. Nuclear Energy Institute (NEI) Document, NEI 12-06, Revision 2, *Diverse and Flexible Coping Strategies (FLEX) Implementation Guide*, December 2015, (ADAMS Accession Number ML16005A625)
 2. U.S. Nuclear Regulatory Commission (NRC) Japan Lessons-Learned Division (JLD) Interim Staff Guidance (ISG) Document, JLD-ISG-2012-01, Revision 1, *Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events*, dated January 22, 2016, (ADAMS Accession Number ML15357A163)
 3. APS Letter 102-07010, *Seismic Hazard and Screening Report*, dated March 10, 2015 (ADAMS Accession No. ML15076A073)
 4. NRC Letter, *Palo Verde Nuclear Generating Station, Units 1, 2, and 3 – Staff Assessment of Information provided under Title 10 of The Code of Federal Regulations Part 50, Section 50.54(f), Seismic Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident and Staff Closure of Activities Associated with Recommendation 2.1, "Seismic,"* dated September 13, 2016 (ADAMS Accession No. ML16221A604)
 5. NRC Letter, *Final Determination of Licensee Seismic Probabilistic Risk Assessments under the Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 2.1 "Seismic" of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident*, dated October 27, 2015 (ADAMS Accession No. ML15194A015)

Dear Sirs:

Subject: **Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528, 50-529, and 50-530
NEI 12-06, Appendix H, Revision 2, Section H.4.1 Path 1:
GMRS \leq SSE, Mitigating Strategies Assessment (MSA) Report
for the New Seismic Hazard Information**

The purpose of this letter is to provide the results of the PVNGS assessment to determine if the FLEX strategies developed, implemented and maintained in accordance with NRC Order EA-12-049 can be implemented considering the impacts of the reevaluated seismic hazard. The assessment was performed in accordance with the

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guidance provided in Appendix H of NEI 12-06, Revision 2 (Reference 1), which was endorsed by the NRC (Reference 2).

The Mitigating Strategies Seismic Hazard Information (MSSHI) is the licensee's reevaluated seismic hazard information, developed using Probabilistic Seismic Hazard Analysis (PSHA). The MSSHI includes a performance-based Ground Motion Response Spectrum (GMRS), Uniform Hazard Response Spectra (UHRs) at various annual probabilities of exceedance, and a family of seismic hazard curves at various frequencies and fractiles developed at the PVNGS control point elevation. APS submitted the reevaluated seismic hazard information including the UHRs, GMRS and the hazard curves to the NRC on March 10, 2015 (Reference 3). The NRC staff concluded that the GMRS submitted adequately characterizes the reevaluated seismic hazard for the PVNGS site (Reference 4).

Consistent with NEI 12-06 Section H.4.1, Path 1: GMRS \leq SSE, PVNGS is generally bounded by the existing plant design-basis safe shutdown earthquake. Specifically, minor exceedances were noted at approximately 1.2 Hertz (Hz) and at greater than 35 Hz (Reference 5). The NRC considered these exceedances "de minimis" (too minor to merit consideration). Therefore, the FLEX strategies for PVNGS can be implemented as designed and no further seismic evaluations are necessary.

No commitments are being made in this letter. Should you need further information regarding this response, please contact Michael D. DiLorenzo, Licensing Section Leader, at (623) 393-3495.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on January 31, 2017
(Date)

Sincerely,

MLL/MDD/af

cc: K. M. Kennedy
S. P. Lingam
M. M. Watford
C. A. Peabody

NRC Region IV Regional Administrator
NRC NRR Project Manager for PVNGS
NRC NRR Project Manager
NRC Senior Resident Inspector for PVNGS