DRAFT REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST TO REVISE THE

STEAM GENERATOR TUBE RUPTURE ACCIDENT ANALYSIS

PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3

DOCKET NOS. STN-50-528, STN-50-529, AND STN-50-530

ARIZONA PUBLIC SERVICE COMPANY

By letter dated July 22, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML102150352), Arizona Public Service Company (the licensee), submitted a license amendment request (LAR) to revise an element of the methodology used in evaluating the radiological consequences of design basis Steam Generator Tube Rupture (SGTR) accidents at the Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, as described in the Updated Final Safety Analysis Report (UFSAR). The revision would revise the iodine spiking factor used for a coincident event-generated iodine spike (GIS) from a value of 500 to a value of 335.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information provided by the licensee and determined that the following additional information is needed to complete the review:

1. In Enclosure 1, page 2, the LAR proposes to change an element of methodology (assumption) used in evaluating the radiological consequences of design basis SGTR accidents. Specifically, this proposed change would revise the iodine spiking factor used for a coincident event-Generated Iodine Spike (GIS) from a value of 500 to 335. For the GIS spiking factor of 500 currently used in the dose analysis of record (AOR), a 2-hour thyroid dose value of 182 rem at the exclusion area boundary (EAB), and an 8-hour thyroid dose value of 125 rem at the low population zone (LPZ) were determined as presented in Table 15.6.3-5 of the PVNGS UFSAR. The LAR asserts that use of the newly proposed GIS spiking factor of 335 would result in the 2-hour thyroid dose at the EAB to be reduced to approximately 124 rem. The LAR also asserts that the 8-hour thyroid dose at the LPZ would be reduced to approximately 84 rem.

   The LAR further asserts that the current Pre-Accident Iodine Spike (PIS) values would not be affected by the proposed methodology change. The LAR also states,

   > *"The NRC acceptance criterion previously specified on the PVNGS licensing docket for both GIS and PIS cases is 100% of the 10 CFR Part 100 guideline values which allowed a maximum thyroid dose of 300 rem. The results of this proposed change still remain within these acceptance criteria."*

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 100.11 sets the regulatory limits for offsite radiological dose consequences at both the EAB and LPZ at 25 rem whole body and/or 300 rem thyroid. Further, acceptance criteria provided in Revision 2 of the Standard Review Plan (NUREG-0800), Section 15.6.3, "Radiological Consequences of Steam Generator Tube Failure (PWR)," provides applicable guidelines which state,

> *"…for the postulated accident with the equilibrium iodine concentration for continued full power operation in combination with an assumed accident initiated iodine spike, the calculated doses should not exceed a small fraction of the above [10 CFR Part 100] guideline values, i.e., 10 percent or 2.5 rem and 30 rem, respectively, for the whole-body and thyroid doses."*

Therefore, Revision 2 of NUREG-0800 has effectively established guidance that offsite radiological dose consequences are limited to a small fraction, or 10% of the 10 CFR Section 100.11 guideline values.

In regard to the offsite radiological dose consequences for the SGTR with an assumed accident-initiated iodine spike, please provide justification as to why the proposed 2-hour thyroid dose value of 124 rem at the EAB, and 8-hour thyroid dose value of 84 rem at the LPZ are appropriate, considering that each exceeds the current NRC staff review criterion of 30 rem to the thyroid for offsite dose. Please also provide all pertinent analyses and/or radiological dose calculations that support the justification to allow the staff to conduct an independent evaluation.

Please also verify that the proposed change would not result in a control room (CR) dose above the 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," Criterion 19 limit of 5 rem. Please provide all pertinent radiological analyses, calculations, or documentation needed in order for the NRC staff to conduct an independent evaluation. As it pertains to the PVNGS's current AOR, please also specify where the current CR radiological dose consequence values for the SGTR accident are located.