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RECIP.NAME RECIPIENT AFFILIATION
KNIGHTON,G. Licensing Branch 3

SUBJECT: Forwards commitment to comply w/five NRC conditions prior to fuel load of Unit 1,per SER (NUREG-0857),Item II.B.3 of NUREG-0737 & Rev 2 to Reg Guide 1.97.Installation of post-accident sampling sys in Unit 1 complete.

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[illegible] Electric Service Co.

[illegible] to comply with [illegible] RL conditions prior to
fuel load [illegible] of
[illegible] to Rev [illegible] 1.a.(7). Installation of
post-accident [illegible] sys [illegible] Unit 1 operation.

[illegible]

Arizona Public Service Company

ANPP-30593-EEVBJr/WFQ/MAJ
September 27, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. George Knighton, Chief
Licensing Branch No. 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Post-Accident Sampling System
Docket Nos. STN 50-528/529/530
File: 84-056-026; G.1.01.10

Reference: (1) Safety Evaluation Report related to the operation of Palo Verde Nuclear Generating Station Units 1, 2, and 3 dated November 1981.

Dear Mr. Knighton:

The Palo Verde Nuclear Generating Station Units 1, 2, and 3 Safety Evaluation Report, NUREG-0857 (Palo Verde SER) discussed the Post-Accident Sampling System (PASS), which we committed to provide to meet the requirements of NUREG-0737, Item II.B.3 and Regulatory Guide 1.97, Revision 2. As stated in Section II.B.3 of the SER, the NRC staff found our commitment to be acceptable subject to compliance with five stated conditions prior to exceeding 5% power operation and to such modifications as may be determined to be necessary following a generic review by the staff of procedures and instrumentation to be used for post-accident analysis.

With respect to the five stated conditions, you have verbally advised us that compliance is now required prior to fuel load. The attachment to this letter is submitted to show that compliance with each of the five conditions will be achieved prior to fuel load of Unit 1.

Installation of PASS in Unit 1 is complete. It was subjected to testing during the course of the recent Demonstration Test of the Reactor Coolant System. Such testing disclosed the need for certain modifications to improve sampling capability. Such modifications will be completed in September, 1984, and tested prior to fuel load. During the post-fuel load hot functional tests of Unit 1, the PASS will be further tested and calibrated. Concurrently, it will undergo a 60-day operability test. Upon satisfactory completion of this test, the PASS will be considered operational. During the interim period, prior to achieving operational

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status, backup sampling meeting the requirements of NUREG-0737 will be available with sample analyses as described in the attached Table 1.

If additional information is required respecting these matters, we shall be pleased to furnish it to you.

Very truly yours,

E E Van Brunt/BSK

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Production
ANPP Project Director

EEVBJr/MAJ/mb
Attachment

cc: A. C. Gehr (w/a)
E. A. Licitra (w/a)
R. P. Zimmerman (w/a)
J. Wing (w/a)

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, Donald Karner, represent that I am Assistant Vice President, Nuclear Production of Arizona Public Service Company, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority to do so, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true.

Donald Karner

Sworn to before me this 27th day of September, 1984.

Nora E. Meador
Notary Public

My Commission Expires:
My Commission Expires April 6, 1987

ATTACHMENT TO ANPP-30593
SEPTEMBER 27, 1984

APS RESPONSE TO POST ACCIDENT SAMPLING SYSTEM LICENSE CONDITIONS

LICENSE CONDITION: 1. Verify that backup sampling is capable of providing at least one sample per day for 7 days following onset of the accident, and at least one sample per week until the accident condition no longer exists.

RESPONSE: APS will verify backup sampling capability consistent with NUREG-0737, Item II.B.3, Criterion 8 prior to PVNGS Unit 1 Fuel Load.

(0015K/0001K)

LICENSE
CONDITION: 2. Describe the procedures for onsite radiological and chemical analyses and provide the accuracy, range, and sensitivity of these analyses in an accident chemistry and radiation environment, i.e., presence of large amounts of fission products and a high radiation field in the samples.

RESPONSE: The following tables describe the PVNGS onsite radiological and chemical analyses along with the accuracy, range, and sensitivity of these analyses in an accident chemistry and radiation environment.

Table 1, page 3, describes the PASS Backup Grab Sample Analyses. (Information in table from actual analytical practice).

Table 2, page 4, describes the Normal Pass Inline Analyses. (Information in table is from vendor data sheets).

Notes for these tables can be found on page 5.

TABLE 1

PASS BACKUP GRAB SAMPLE
(HIGH RADIATION FIELD)

ION SPECIES	RANGE	SENSITIVITY	ACCURACY	CURRENT PROCEDURE	CALIBRATION
ph	1-14 (Note 7)	1	±0.1 pH	74CH-9ZZ35 Rev. 2	--
Conductivity	1-100Kμmhos (Note 7)	1μmho	±2% of Reading	74CH-9ZZ17 Rev. 2	--
Dissolved Oxygen	(Note 2)	--	--	--	--
Chloride Ion	Ion Chromatograph .02-100 ppm	.02 ppm	±5 ppb	74CH-9ZZ72 Rev. 1	Note 4
	Titrametric .05-100 ppm	.05 ppm	±.05 ppm	74CH-9ZZ10 Rev. 3	Note 4
Boron	Autotitrametric 2-5000 ppm	2 ppm	±1% of Reading	74CH-9ZZ06 Rev. 2	Note 4
	Manual Potentiometric 10-5000 ppm	10 ppm	±10% of Reading	74CH-9ZZ84 Rev. 0	Note 4
Gaseous Hydrogen	Gas Chromatograph 50 ppm-300 ppm	50 ppm	±25% of Reading	74CH-9ZZ65 Rev. 1	Note 4
Gaseous Oxygen	Gas Chromatograph 100 ppm-300 ppm	100 ppm	±25% of Reading	74CH-9ZZ65 Rev. 1	Note 4
Radio-Isotope (Liquid)	3 Decades Above MDA	Note 6	±5%	74CH-9ZZ63 Rev. 1	Note 5
Radio-Isotope (Gaseous)	3 Decades Above MDA	Note 6	±5%	74CH-9ZZ63 Rev. 1	Note 5
Total Gas	(Note 2)	--	--	--	--

TABLE 2

NORMAL PASS INLINE INSTRUMENTS

ION SPECIES	RANGE	SENSITIVITY	ACCURACY	CURRENT PROCEDURE	CALIBRATION
ph	1-13	$>2, <12$	$\pm$.5 ph Note 1	74CH-9ZZ90 Rev. 1	Note 1
Conductivity	0-$10^7\mu$mhos	1000μmhos	$\pm 2X10^4\mu$mhos	74CH-9ZZ90 Rev. 1	Note 4
Dissolved Oxygen	0-20 ppm	.2 ppm	$\pm$.4 ppm	74CH-9ZZ90 Rev. 1	Note 3
Chloride Ion	0-20 ppm	.1 ppm	$\pm$.05 ppm @ $<$ 1 ppm $\pm$5% of Reading @ $>$ 1 ppm	74CH-9ZZ90 Rev. 1	Note 4
Boron	0-6000 ppm	100 ppm	$\pm$5% of Reading $\pm$5ppm	74CH-9ZZ90 Rev. 1	Note 3
Gaseous Hydrogen	0-30%	1% H_2 (in N_2)	$\pm$.75% H_2 (in N_2)	74CH-9ZZ09 Rev. 1	Note 4
Gaseous Oxygen	1-30%	1% O_2	$\pm$.75% O_2	74CH-9ZZ90 Rev. 1	Note 4
Radio-Isotope (Liquid)	$10^{-1}\mu$Ci/cc To 10 Ci/cc	$10^{-1}\mu$Ci/cc	Factor of 2	74CH-9ZZ90 Rev. 1	Note 5
Radio-Isotope (Gaseous)	$10^{-3}\mu$Ci/cc To 10^{-1} Ci/cc	$10^{-3}\mu$Ci/cc	Factor of 2	74CH-9ZZ90 Rev. 1	Note 5
Total Gas	0-2000 cc/kg @ STP	100 cc/kg	$\pm$100 cc/kg	74CH-9ZZ90 Rev. 1	Note 3

NOTE - The above mentioned instruments comply with R.G. 1.97 Rev. 2.

NOTES FOR TABLES 1 AND 2

Note 1 - PASS Performance Test Procedure 74HF-1SS03, Rev. 0, requires an accuracy specification for the PASS ph meters of ±.2 ph units within the range of 4-10 ph units. Calibration is performed weekly or prior to use.

Note 2 - Grab samples may not be applicable because of:

1. Excessive Dilution
2. Sample size because of high radiation field effects.

Note 3 - Calibration check will be accomplished by a comparison with the Nuclear Sampling System analysis.

Note 4 - Calibration check will be accomplished by comparison to a calibration standard.

Note 5 - Calibration checks will be accomplished by comparison to NBS traceable calibration check sources.

Note 6 - The sensitivity of these detectors or Minimum Detectable Activity (MDA) will be measured with multiple geometries and source strengths.

Note 7 - Undiluted Sample Only

LICENSE
CONDITION: 3. Verify that the ventilation exhaust from the sample station will be filtered with charcoal adsorbers and high-efficiency particulate air filters.

RESPONSE: The ventilation exhaust from the PASS sample station is filtered through HEPA and charcoal filters AFU-HAN-J01A and AFU-HAN-J01B located in the Auxiliary Building. Reference FSAR Figure 9.4-3, Sheets 1-4.

LICENSE

CONDITION: 4. Provide a procedure for relating radionuclide gaseous and ionic species to estimated core damage.

RESPONSE: The procedure to be utilized at PVNGS to estimate the degree of core damage was developed from the "Development of Comprehensive Procedure Guidelines for Core Damage Assessment", Combustion Engineering Owners Group Task 467, dated July, 1983. PVNGS Procedure 74CH-9ZZ47 uses isotopic analysis data obtained from the Reactor Coolant, Containment Atmosphere, and Containment Sump PASS sample points. The data from specific noble and halogen gas gamma emitting isotopes are then used to determine whether the fission products have been released from the fuel rod gas gap or the fuel pellet. The activities from the group of isotopes are then compared to the full power corrected source inventory to assist in determining into which NRC fuel damage category the event may fall.

LICENSE
CONDITION: 5. Provide information on (a) testing frequency and type of testing to ensure long-term operability of the post-accident sampling system, and (b) operator training requirements for post-accident sampling.

RESPONSE: (a) An operational availability demonstration will be performed during post-core hot functional testing of PVNGS Unit 1 which will measure the percentage of time that the PASS is unavailable during a 60 day system exercise. Additionally, a weekly system exercise (surveillance test) will be performed for reactor coolant and containment atmosphere samples by:

1. Automatic-Computer controlled operation for all PASS analyses, and

2. Operator Controlled grab sample with the parallel lab sample analyses.

The analyses results are then checked between PASS and the lab samples for pH, conductivity, chloride ion, dissolved oxygen, total gas and/or hydrogen, boron, gaseous oxygen and hydrogen (containment atmosphere), gross activity and isotopic analyses.

Calibration checks will be completed weekly or prior to use by the calibration methodology identified in Tables 1 through 3. These checks will be done in accordance with the Administration Control Technical Specification 6.8.4.E.

(b) Operator training will be done in accordance with 74CH-9ZZ98, Revision 1, Chemistry Section Training. This procedure includes classroom training on the requirements, operating characteristics, sample point locations, calibration and operation of analytical equipment, expected range of readings during normal and post accident conditions and relationship to core damage assessment. Additionally, hands-on training includes demonstration of ability to properly operate the external system interface valves, system startup, computer control, and operator mode control of both the PASS and remote grab sampler.