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BOUCHEY,G.D. Washington Public Power Supply System
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SCHWENCER,A. Licensing Branch 2

SUBJECT: Forwards marked-up revised response to Question 311.1 in Siting Analysis Branch 810722 ltr. Minor revisions made in followup to 811020 site visit will be incorporated in FSAR amend.

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December 15, 1981
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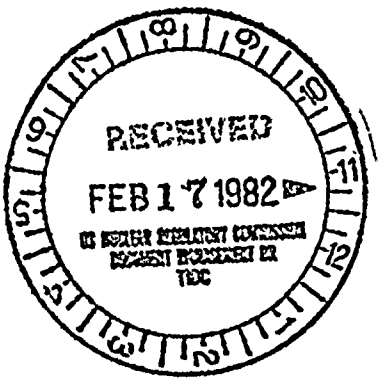

Docket No. 50-397

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2
SITING ANALYSIS BRANCH

Reference:
a) Letter, R.L. Tedesco to R.L. Ferguson, "WNP-2 FSAR - Request for Additional Information", dated July 22, 1981

b) Letter, G.D. Bouchey to A. Schwencer, same subject, dated September 17, 1981

Enclosed are sixty (60) copies of the revised response to NRC Question 311.1 from the Siting Analysis Branch (SAB). This question was transmitted to the Supply System by Reference (a) and the initial response was forwarded by Reference (b). Minor revisions are made in follow-up to the SAB site visit of October 20, 1981. It will be incorporated into the FSAR in an amendment within four (4) months.

Very truly yours,

Original Signed By:

G. D. Bouchey
Deputy Director, Safety and Security

CDT/rch
Enclosures

cc: R Auluck - NRC
WS Chin - BPA
R Feil - NRC Site

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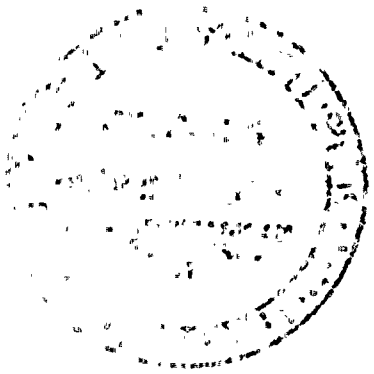
S1/1



Q. 311.001

Section 2.2 of the FSAR and Figure 2.2-2 indicates that the DOE railroad passes through the WNP-2 exclusion zone in close proximity to safety-related equipment. During the CP stage this was addressed and our findings as reported in our Safety Evaluation, dated September 22, 1972, stated in part ... Section 2.8 ... "A main line track of the AEC-owned railroad system passes within the site exclusion area. The applicant in Amendments 2 and 12 CCP application) has analyzed the effect of potential accidents involving hazardous railroad cargo such as dynamite ...".

Please provide your current analysis, addressing both toxic as well as explosive hazards. Please use the guidance of Regulatory Guide 1.78 in preparing this analysis.

Response:

Subsections 2.2.2.2 and 2.2.3.1 have been amended to more fully address hazardous material shipments on the DOE railroad.* Explosives are not transported on the railroad and the few shipments of toxic materials do not pose a threat to plant operation.

*Draft FSAR page changes attached.

~~During 1971 AEC Richland reported handling 12,000 lbs. of~~ dynamite on the mainline railroad for a special explosion as part of seismic investigations on the Hanford Site. Further rail shipments of dynamite are not planned by the DOE (Reference 2.2-5). There were no explosives transported past ~~the WPPSS sites during 1978 (Reference 2.2-4)~~.

~~The Department of Energy~~ DOE's Richland Operations office has agreed to notify ~~WPPSS~~ the Supply System prior to transporting any explosive shipments of more than 1,800 pounds past the WNP-2 site. They will also inform ~~WPPSS~~ the Supply System of any plans to regularly ship explosives of a lesser quantity by rail past the site (Reference 2.2-1). ~~WPPSS~~ will provide an analysis to the NRC of the potential consequences prior to the start of such shipping (Reference 2.2-7).

Within a 5-mile radius of WNP-2, there are three sites where radioactive materials are stored as a result of Hanford operations. The two radioactive waste disposal sites, Wye Burial and 300 North (see 2.2.2.1), contain a broad spectrum of low to high-level solid wastes, primarily fission products and plutonium from past research and production activities. Cartoned low-level waste was buried in trenches and medium to high-level waste was placed in caissons or buried pipe facilities (Reference 2.2-9). The third site is the FFTF which will contain irradiated fuel elements and reactor structural components.

P In the period July 1980 through June 1981 the dangerous material shipments were: caustic soda (16), chlorine (2), helium (15), sulfuric acid (3), and radioactive material (9) (Reference 2.2-23). Two materials which have been shipped in the past and will likely be shipped in the future are nitric acid and phosphoric acid (Reference 2.2-24).

P There have been no shipments of explosives on the DOE railroad in the past six years and the agency has no plans for such shipments in the foreseeable future (Reference 2.2-1).

2.2.2.6 Projection of Industrial Growth

There is no projected growth of waterway traffic nor plans for oil and gas pipelines within 10 miles of WNP-2. The WNP-1 and 4 projects are the only facilities presnetly under construction in the vicinity of the WNP-2 plant site. Table 2.2-3 shows the projections for utilization of the three nearby commercial airports.

2.2.3 EVALUATION OF POTENTIAL ACCIDENTS

2.2.3.1 Determination of Design Basis Events

The Supply System has investigated the resistance of the plant structures to explosions. The reactor building is a reinforced concrete structure up to the refueling floor and is designed to withstand the worst probable combination of wind velocity and associated pressure drop due to the design basis tornado. A differential pressure of 3 psi between the exterior and interior of the building is also considered in the design. At its nearest point, the railroad is 510 feet from the reactor building.

From the above criteria, it has been determined that the reactor building can resist an explosion of 20,000 lbs of dynamite on a railway car 510 feet from the reactor building.

In the unlikely event of an explosion or fire on the railroad affecting the 115 kV shutdown power supply, the 230 kV power supply or the diesel-generators would fulfill that function.

It is extremely unlikely that an explosion or fire on the mainline railroad would compromise the safe shutdown of the facility. ~~There are no explosives stored within five miles of the WNP-2 site~~. The only explosives on the Hanford Site are small arms munitions. As described in 2.2.2.2, this represents no hazard to the operation of WNP-2. The Yakima Firing Center, located between 30 and 50 miles from the site does not endanger the site.

as noted in Subsection 2.2.2.2, DOE has no plans to ship explosives on the railroad and the agency will notify the Supply System prior to the ~~of~~ shipment of explosives in a quantity greater than 1800 lbs.

~~No dangerous materials are being transported past the plant~~ site frequently enough to be included in an accident consideration. The only material that is potentially transported by rail past the site more than 30 times per year (as specified in Regulatory Guide 1.78) is caustic soda, which is nonflammable.

Brush fires have occurred on the Hanford Site and have presented no potential hazard to existing production facilities. Areas adjacent to WNP-2 major buildings and auxiliary facilities are maintained to prevent weed growth by landscaping, gravel, ground cover, and weed control spraying. These or similar methods of weed growth control will be employed in the vicinity of the WNP-2 facilities to eliminate the hazard from brush fires.

The potential effects of fires that involve materials used in the operation of the plant are discussed in 9.5.1.

The formation of unconfined vapor clouds caused by the accidental release of flammable or toxic liquids or vapors stored at the plant site is discussed in 6.4, 13.3 and in the WNP-2 Environmental Report Section 7.2.

There is no commercial river traffic passing the site as discussed in 2.2.1. Only small pleasure boats normally use the river.

R Of the acids and caustic shipped past the plant site, nitric acid is the most susceptible to vaporization at ambient temperatures and pressures. The rupture of a 100-ton tank car would result in a HNO_3 concentration several orders of magnitude less than the short term exposure limit of 10 mg/m^3 at the control room air intake located 85 ft above plant grade. While acid and caustic spills require caution on the part of clean-up crews, such spills do not threaten plant operation or safety-related structures. Of the other materials carried on the rail line, only chlorine is a potential threat. The consequences of a rupture of the largest chlorine shipping container (one-ton cylinder) used on the railroad at its closest approach to WNP-2 would be no more severe than for a release from onsite storage. This latter condition is discussed in Subsection 6.4.4.2.1. Using the methods of Regulatory Guide 1.78, it is conservatively estimated that an instantaneous release on the railroad would result in a chlorine concentration of less than 2 mg/m^3 at the control room air intake.

2.2.4 REFERENCES

2.2-1 Letter, ~~Fitzsimmons, T. R.~~ Bracken, K.W., Director, Facilities and Site Services Division, DOE, to ~~J. P. Thomas~~ K.R. Wise, WPPSS, dated ~~June 19, 1979~~ December 4, 1981.

2.2-2 Zuniga, J. R., WPPSS, personal communication with S. Foster, Environmental Resources Group, U. S. Army Corps of Engineers, January 30, 1979.

2.2-3 Chasse, J. P., WPPSS, private communication with B. J. Rokkan, Safeguards and Security Division, DOE, Richland Operations Office, December 6, 1977.

2.2-4 Zuniga, J. R., WPPSS, personal communication with R. Cross, Rockwell Hanford, February 14, 1977.

2.2-5 DELETED ~~Caitwood, R.A., WPPSS, private communication with Gottschalk, P.W., Chief of Production Operations Branch USAEC Richland Operations Office October 1, 1974.~~

2.2-6 DELETED

2.2-7 WNP-1 PSAR (Docket Nos. 50-460 and 50-513), answer to question 2.91.

2.2-8 DELETED

2.2-9 Final Environmental Statement, Waste Management Operations, Hanford Reservation, U. S. Energy Research and Development Administration, December 1975, Vol. 2, P. II.1-E-9.

2.2-10 Jaske, R.T., Large Scale Quarry Blasting on the Hanford Reservation, USAEC Report HW-79614, January 15, 1964.

2.2-11 Resor, Secretary of the Army, Letter to Senator J. Randolph in Senate Document No. 91-112, 91st Congress, 2nd Session, (referred to committee on Public Works on Nov. 17, 1970) P. VII.

2.2-12 Brandstetter, Albin, Battelle-Northwest Laboratories letter to Verderber, J. J., Burns and Roe, Inc. dated December 20, 1977.

2.2-13 Chasse, J. P., personal communication with Cascade Airways and Highes Airwest offices, February 15, 1979.

2.2-14 Brandstetter, Albin, Battelle-Northwest Laboratories letter to Verderber, J. J., Burns and Roe, Inc. dated December 1, 1976.

2.2-15 "Tri-Cities Airport Master Plan". Port of Pasco, Pasco, Washington, dated March 11, 1976.

2.2-16 Chasse, J. P., WPPSS, personal communication with G. Mayfield, Vista Aviation, Inc., May 2, 1979.

2.2-17 Letter, Maj. C. K. Jackson, Director of Plans, Training, and Security, Yakima Firing Center, to J. P. Chasse, WPPSS, dated December 13, 1977.

2.2-18 "Richland Airport Master Plan Update", Stevens, Thompson and Runyan, Inc., June 1978.

2.2-19 "Tri-Cities Airport 1978 Activity Statistics", Port of Pasco, January 19, 1979.

2.2-20 Zuniga, J. R., WPPSS, personal commuinicaton with E. Phinney, Battelle Northwest Laboratories, April 24, 1979.

2.2-21 "Jeppeson Airway Manual", Jepperson Sanderson, Inc., Denver, Colorado, Updated to February 1980.

2.2-22 Oldfield, G. V., WPPSS, personal communication with L. Dickinson, Federal Aviation Administration, January 15, 1980.

2.2-23 Chasse, J.P., WPPSS, personal communication with L. Hindoman, Traffic Department, Rockwell-Hanford, August 11, 1981.

2.2-24 Chasse, J.P., WPPSS, personal communication with J.M. Peterson, Facilities and Site Services Division, Department of Energy, October 20, 1981.