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SAB Rdg
SAB Plant
WJohnston
WRegan
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JUN 10 1983

Docket No. 50-508

MEMORANDUM FOR: Lewis G. Hulman, Chief
Accident Evaluation Branch, DSI

FROM: Wm. H. Regan, Jr., Chief
Site Analysis Branch, DE

SUBJECT: WMP-3 DEIS INPUT AND POPULATION PROJECTIONS FOR
THE YEAR 2000

Attached, as requested by your Branch, is the input for Section 5.9.2.1.3(2), Site Features, of the WMP-3 DEIS, and the population projections for the year 2000 out to a distance of 500 miles around the WMP-3 site. The applicant's projections were used for the population from 0 to 10 miles. From 10 to 100 miles the data was obtained from Donnelley Marketing and Information Services. The 100 to 500 mile data is based on the county population statistics provided by the Bureau of Economic Affairs within the radius of interest using the coordinates 46° 57' 34" N latitude and 123° 28' 15" W longitude. Population projections for Canada within 500 miles of the plant are also included, and were obtained from general demographic references.

This input was prepared by Al Brauner in conjunction with Mike Kaltman of the Site Analysis Branch.

Original signed by W. H. Regan, Jr.

Wm. H. Regan, Jr., Chief
Site Analysis Branch
Division of Engineering

Attachment:
As stated

cc: A. Vietti
M. Kaltman
K. Campe
A. Brauner

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SURNAME	ABrauner:11	KCampe	WRegan				
DATE	6/16/83	6/10/83	6/9/83				

WNP-3 DEIS
SITE FEATURES

5.9.2.1.3(2)

The NRC's reactor site criteria, 10CFR Part 100, require that for every power reactor the site have certain characteristics that tend to reduce the risk and potential impact of accidents. The discussion that follows briefly describes the WNP-3 site characteristics and how they meet these requirements.

First, the site has an exclusion area as required by 10CFR Part 100 which is a circular area with a 4300 ft (1310 meter) radius measured from the center of the reactor containment building. The Washington Public Power Supply System (WPPSS) owns approximately 1120 acres of the site in which the exclusion area is located. The rest of the site area is owned by private corporations or individuals but under the control of WPPSS by agreement with these owners. These agreements provide easements to the land. All of the mineral rights in the site area will be either owned or controlled by WPPSS. There are no residents living within the exclusion area. The only activities unrelated to plant operations that occur within the exclusion area are those associated with tree farming and transmission line maintenance. Approximately 30 persons and associated temporary structures and facilities may be located within the exclusion area from time to time to conduct timber farming activities. These activities are subject to prior planning and approval by WPPSS. Also, personnel from the Bonneville Power Administration (BPA), by agreement with WPPSS, will be conducting maintenance in the BPA transmission corridor falling within the

exclusion area. Therefore, the applicant has the authority required by Part 100 to determine all activities within the exclusion area.

There are no railroads, waterways or highways traversing the exclusion area. The only vehicular traffic to contend with is on the access roads leading to the plant and the BPA corridor. In case of an emergency, arrangements have been made to limit access, and control the activity and evacuation of everyone in the exclusion area.

Second, beyond and surrounding the exclusion area is a low population zone (LPZ), also required by 10CFR Part 100. The LPZ for the WNP-3 site is a circular area with a three mile (4827 meter) radius measured from a point centered on a line midway between unit 3 and the previously planned unit 5. Except for the Chehalis and Satsop Rivers, the LPZ consists mostly of wooded areas. There is some limited recreational activity on the rivers. Within the LPZ the applicant must assure that there is a reasonable probability that appropriate protective measures could be taken on behalf of the residents and other members of the public in the event of a serious accident. The applicant has indicated that there were about 906 persons residing in the LPZ in 1980, and project the population to increase to about 1506 by the year 2030. In case of a radiological emergency, the applicant has made arrangements to carry out protective actions, including evacuation of personnel in the vicinity of the WNP-3 nuclear plant. For further details, see the following section on Emergency Preparedness.

Third, 10CFR Part 100 also requires that the distance from the reactor to the nearest boundary of a densely populated area containing more than about 25,000 residents be at least one and one-third times the distance from the reactor to the outer boundary of the LPZ. Since accidents of greater potential hazards than those commonly postulated as representing an upper limit are conceivable, although highly improbable, it was considered desirable to add the population center distance requirements in Part 100 to provide for protection against excessive exposure doses to people in large centers. The cities of Aberdeen-Hoquiam, located approximately 16 miles west of the plant, with a combined population of 35,170 in 1980 is the nearest population center. The distance from the site to the Aberdeen-Hoquiam area is at least one and one-third times the distance to the outer boundary of the LPZ. Olympia, the capital of Washington, is about 26 miles east of the site and had a population of 27,447 in 1980. The largest city near the site is Tacoma, Washington, located about 50 miles northeast with a 1980 population of 158,501. The population density within 30 miles of the site when the plant is scheduled to go into operation (about 1986) is projected to be 66 persons per square mile, and is not expected to exceed 105 persons per square mile during the life of the plant.

The safety evaluation of the WNP-3 site has also included a review of potential external hazards, i.e. activities off-site that might adversely affect the operation of the plant and cause an accident. This review encompassed nearby industrial, transportation, and military facilities

that might create explosive, missile, toxic gas or similar hazards. The risk to the WNP-3 facility from such hazards has been found to be negligibly small. A more detailed discussion of the compliance with the Commission's siting criteria and the consideration of external hazards are given in the staff's Safety Evaluation Report.

Expt: WNP-3

YEAR 2000

	308.7-	11.3-	33.7-	56.2-	78.7-	101.2-	133.7-	146.2-	168.7-	191.2-	213.7-	236.2-	258.7-	281.2-	303.7-	326.2-
	11.2	33.7	56.2	78.7	101.2	123.7	146.2	168.7	191.2	213.7	236.2	258.7	281.2	303.7	326.2	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	11	3	13	128	3	8	3	3	3	3	3	3	3	3	3	3
0-1	11															
1-2	10	3	13	128	3	8	3	3	3	3	3	3	3	35	38	14
2-3	93	367	16	121	24	8								35	103	246
3-4	209	570	841	121	24	8							20	135	572	139
4-5	73	96	3555	159	91	55							40	427	64	71
5-10	254	81	1820	489	690	332	155			21		3	2575	5162		320
10-15			1706	1706			1319						5992			
15-20			758	1029	697	3041	390			2185			34436		1802	
20-25		2434	11894	2392	10917	2801		1114	1009	1123	2500	1418	1905			151
25-30	88	58f	6309	91243	26295	11792	11714	729		931	2783	1094	1470		1679	91
30-35	151	2816	5785	13900	47877	1317	17105	1376		1487	1511		4408		95	1108
35-40		406	18167	206557	8715	4457	9245	2110	1722	1879	2161				987	413
40-45		1588	118052	323733	43221	827	4180	24772	10578	20594					268	30
45-50		4993	318339	327875	7117	4550	907	74590	584	10691					139	535
50-55	39434	21646	72636	143791	1012	4523	380	37562	3649	4994				389	7231	111
55-60		33883	214163	15127	432	1453	4461	162883	13759	7544					3477	45
60-65	398017	26883		30176	209395	10163	145198	457360								
65-70	2264518	90431		81575	58897	22120		270401								
70-75	12050	104397	214922	160807	734136	419292	43619	169916	893311							44.50
75-80	121070		14136	143158	180380	301272	219695	77983	332211							597.3
80-85	396	1036	3425	408	118	63	3									
85-90	650	1117	5245	897	808	375	158			21		3	2648	5794	777	473
90-95	889	7357	50163	256724	95562	27105	39934	6371	2741	7346	6763	3515	50159	8992	5340	2465