

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
WASHINGTON PUBLIC POWER SUPPLY)	Docket Nos. STN 50-508
SYSTEM)	STN 50-509
)	
(WPPSS Nuclear Project Nos. 3 and 5))	

AFFIDAVIT OF DONALD W. CONNOR

I, Donald W. Connor, being duly sworn do depose and state that:

I am the member of the staff of the Division of Environmental Impact Studies, (formerly Environmental Statement Project) Argonne National Laboratory responsible for analyzing the need for the power which the proposed WNP-3 and 5 facility would produce. My duties and professional qualifications are incorporated into the transcript of this proceeding following page 182. In addition, I submitted prepared testimony entitled Supplemental Testimony Regarding Need for the Proposed Units, which was received into evidence following page 191.

Since the evidentiary hearings of June 24-26, 1975, a number of changes have occurred in the expectations of the utilities of the Pacific Northwest region. These are reflected in the most recent regional forecast, the West Group Forecast, dated March 1, 1976, prepared by the Loads and Resources

Subcommittee of the Pacific Northwest Utilities Conference Committee. ^{*/} Fore-
cast average (energy) loads have been reduced from the 1975 Forecast by about
two percent for the middle 1980's when WNP-3 and WNP-5 are expected to
begin commercial operation. However, the net schedule slippage of scheduled
new generating plants has reduced the projected average (energy) generating
capacity to a greater degree so that energy deficits (under worst-case water
conditions) are now projected for each operating year through 1986-1987, as
shown on line 10 of the attached Table of the Forecast entitled: "West Group
Forecast - Estimated Loads and Resources - July 1976 - June 1987." The
changes in projected average loads and generating capacities are shown in
the following table:

Surplus or (Deficit) of Projected Average Generating Capacity
Over Projected Average Load - Excluding Reserves (Average MWE)

	<u>1975 Forecast</u>	<u>1976 Forecast</u>
1980-81	(1562)	(1,966)
1981-82	(2073)	(2,058)
1982-83	(499)	(2,125)
1983-84	388	(685)
1984-85	1,077	(525)
1985-86	1,634	(31)
1986-87	does not appear	15

*/

As indicated in § 8.2.1 of the NRC Staff's Final Environmental State-
ment, the Staff considers the West Group Forecast to be a reasonably
accurate projection of energy loads and capacities for the Pacific
Northwest.

With better water conditions, it may be that no actual shortages will occur. The probability (based on the historical stream flow records) that projected average capacity will be adequate for projected firm loads in each year through 1986-87 is given on line 15 of the attached table. For most of the years prior to the projected 1983-84 operation, the estimated probability is less than 90 percent and must be judged to be inadequate. [90 percent would be equivalent to the "one loss of load in 10 years" reserve criterion used in most of the U.S. if only a brief shortage were likely. However, in the Pacific Northwest a hydro deficiency is likely to persist for weeks or months so that a reasonable equivalence would require 96-98 percent.]

The staff concludes that the probable need for WNP-3 and WNP-5 appears even greater today than it did a year ago.

Donald W. Connor
Donald W. Connor

Subscribed and sworn before me
this 14th day of May, 1976

Carol J. Dusham
Notary Public

My Commission expires: July, 1978.

WEST GROUP FORECAST - ESTIMATED LOADS AND RESOURCES
JULY 1976 - JUNE 1987

Sheet 1 of 2

Figures are megawatts.

	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87
1. Total Area Peak Load (January)	23,136	24,626	26,108	27,476	28,917	30,245	31,658	33,081	34,608	36,200	37,896
2. Total Peak Resources <u>1/</u>	27,056	28,535	31,788	34,105	35,150	36,314	37,694	41,620	41,769	44,146	45,561
3. Reserve Requirements	(2,776)	(3,201)	(3,655)	(4,121)	(4,627)	(5,142)	(5,698)	(6,285)	(6,922)	(7,240)	(7,579)
4. Peak Resources	24,280	25,334	28,133	29,984	30,523	31,172	31,996	35,335	34,847	36,906	37,982
5. Peak Surplus (Over Total Load)	1,144	708	2,025	2,508	1,606	927	338	2,254	239	706	86
6. Total July-June Energy Load	14,953	15,883	16,902	17,722	18,623	19,418	20,265	21,134	22,027	22,959	23,943
7. Total Energy Resources <u>1/</u>	14,666	14,938	15,105	15,859	16,657	17,360	18,140	20,449	21,502	22,928	23,958
8. Reserve Requirements	(334)	(346)	(356)	(369)	(387)	(361)	(397)	(404)	(416)	(436)	(462)
9. Energy Resources	14,332	14,592	14,749	15,490	16,270	16,999	17,743	20,045	21,086	22,492	23,496
10. Energy Surplus (Over Total Load)	(621)	(1,291)	(2,153)	(2,232)	(2,353)	(2,419)	(2,522)	(1,089)	(941)	(467)	(447)
11. Area Interruptible Load											
(Included in Lines 1 and 6)											
- Peak	1,054	1,085	1,162	1,213	1,257	1,219	1,170	1,179	1,189	1,198	1,209
- Energy	1,019	1,047	1,146	1,181	1,224	1,184	1,131	1,142	1,151	1,161	1,172
12. Fossil-Thermal & Miscellaneous Resources											
(Not Included Above) <u>2/</u>											
- Peak	-	-	-	-	-	-	-	-	-	-	-
- Energy	519	554	592	598	592	592	592	592	592	584	584
Probability of Meeting Total Energy Load in All Periods of: <u>3/</u>											
13. Year Shown	- %	97.0	87.2	80.2	82.2	77.0	76.6	79.4	82.4	90.2	91.4
14. Years, 1976 Through Year Shown	- %	97.0	84.2	69.4	59.0	45.8	36.8	31.0	27.2	24.6	23.0
Probability of Meeting Firm Energy Load in All Periods of: <u>3/</u>											
15. Year Shown	- %	100.0	91.4	87.6	89.8	88.4	85.6	89.2	91.2	94.4	97.6
16. Years, 1976 Through Year Shown	- %	100.0	91.4	81.2	74.6	67.2	58.0	54.0	49.2	47.2	46.6

1/ Resources include hydro; small fossil-fuel plants; Hanford-NPR through October 1977; Centralia; Trojan; West Group portion of Jim Bridger units; Colstrip #1 and #2 (50%), #3 and #4 (70%); WPPSS Nuclear #1, #2, #3, #4, #5; Boardman Coal; Skagit #1 and #2; Pebble Springs #1; and net contractual imports/exports with utilities outside the area. Hanford is not included as a peak resource. Estimated amounts for scheduled maintenance (energy only), hydro realization factor (peak only) and incremental losses have been deducted. All existing thermal units and future thermal units under 500 megawatts (peak and energy) are included in amounts as submitted by respective project owners. The energy availability of all future thermal units 500 megawatts or larger has been included as 60% the first full year and 75% thereafter.

2/ The energy megawatts tabulated in line 12 reflect the amounts of energy available from existing fossil and gas turbine installations which may be considered available as reserve energy resources. These amounts are in addition to those included as firm energy resources in line 7.

3/ Based on same load and resource data as other tabulations herein, except that there is no consideration of energy reserve requirements or realization factor.