JAN 2 6 1976

50

G. S. Spencer, Chief, Reactor Construction and Engineering Support Branch, IE:V

TESTING OF COHESIONLESS SOILS FOR MAXIMUM DENSITY BY ASTM D-2049-69 AT WASHINGTON NUCLEAR PLANT 1 AND 4 (AITS P50151H1)

This is in reply to your letter dated January 16, 1976 which requested any comments or suggestions relative to the information enclosed with that letter.

We have reviewed the material enclosed with the letter which included the following: a note to T. Cox, LWR-1, from WPPSS outlining the test procedures; a record of phone conversation of 1/13/76 between A. Hosler of WPPSS and T. Cox; a record of phone conversation of 1/10/76 between D. Reaberger, T. Houchins, N. Strand and C. Organ of WPPSS and W. Albert, IE:V; and the minutes of an internal WPPSS meeting of 1/10/76. In addition a meeting was held (1/23/76) between R. Shewmaker, IE:HQ; T. Cox, LWR-1 and L. Heller and D. Gallen both from Site Technology of NRR.

Our summary and assessment of the situation are outlined below. This information may be provided to the licensee during the next inspection.

1. Region V should review this item under the guidance provided in IE Procedure No. 35100B (3/31/75), specifically in Section III, Item 7 entitled "Corrective Action." This describes the requirements for determining whether the actions of the licensee have been proper with regard to conformance with 10 CFR 50.55(e). From the information available in your transmittal it appears that the licensee has proceeded in an orderly manner an is in compliance with the regulations. Their activities from 12/8/75 when a "HOLD" was placed on all Class A backfill activities until 1/12/76 when the "HOLD" was released was spent conducting their evaluation of the problem. Their decision that the item was not reportable as a deficiency under 10 CFR 50.55(e) appears to be based on their study effort and also appears to be correct. Notification to the Region was, however, made on this item, apparently to keep the NRC fully informed. It would appear that in this case the licensee should be given recognition of proper performance and a high degree of openness in responding to this matter if the region determines the current understanding by HQ to be sustained upon any further inspection.

2. In consultation with NRR we are recommending that as a minimum three data points be used to establish the relationship between density and vibration amplitude for each gradation. This clarifies the suggested plan contained in the 1/12/76 minutes of the internal WPPSS meeting of 1/10/76. The part pertinent to this issue is quoted below with underscore.

"Obtain a production test machine with a minimum variable range from .007 inches to .015 inches (p-p). Take sieve samples and determine the density-amplitude curves for each gradation. Determine the setting for the maximum density and run the production tests at this amplitude. The density-amplitude curve would be rechecked every two weeks. If any samples fell outside the gradation range, a special density-amplitude curve would be run. For past tests, run at 0.0044 inches, we would correlate with new samples."

3. The frequency of sieve sample tests for material taken from the stockpiles which is being used for backfill is daily. This is defined on page 2P-34, Section 7.4.3.2 of the PSAR. In order to assure that the correct density-amplitude curve is being utilized sieve sample testing should be performed on material removed at the location of sampling for in-place field samples. Sampling is performed on a frequency of once per 750 cu.yds. for Type A areas and once per 1500 cu.yds. for Type B areas. This is described on page 2P-36, Section 7.4.3.6 of the PSAR.

4. Material being placed and controlled by utilizing the correlation concept will be placed at the licensee's risk until the correlation studies are completed and approved by NRC as supporting the original design and construction concept for the soil foundation materials.

5. There has been some informal indication by the licensee that a written report on this item will be available in the future.

Original signed by
K.V. Seyfrit

Karl V. Seyfrit, Chief
Reactor Technical Assistance Branch, IE

cc: G. W. Roy, IE
T. Cox, NRR

RID:515/P50151H1

OFFICE	IE:RTB	IE:RTB				
SURNAME	REShewmaker:sgh	KVSeyfrit				
DATE	1/26/76	1/26/76				

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
SUITE 202, WALNUT CREEK PLAZA
1990 N. CALIFORNIA BOULEVARD
WALNUT CREEK, CALIFORNIA 94596

JAN 1 0 1976

Karl Seyfrit, Chief, Technical Assistance Branch, IE:HQ

WASHINGTON PUBLIC POWER SUPPLY SYSTEM (WPPSS)
WNP-1
DOCKET NO. 50-460, CPPR-134

Attached is a copy of various memos and meeting minutes describing a recent problem at the subject facility relating to soil compaction. This material was received from the licensee by IE:V on 1/16/76. Please refer to daily report items of 1/12 and 1/15.

IE:V will be making a routine inspection at this facility during the last week of January 1976, therefore we would appreciate receiving any comments or suggestions relating to the problem prior to that time. W. G. Albert is the IE:V principal inspector and phoned comments should be directed to him.

W. G. Albert for

G. S. Spencer, Chief
Reactor Construction and
Engineering Support Branch

Enclosure:
As Stated

~~8605290231 PDR~~

1/13/76

Tom:

The total procedure is as follows:

1) Dig out about 1 ft^3 of recompacted material.

2) Line hole with rubber liner, fill with water, pump out water and determine its volume.

3) Dry and weigh sample.

4) Calculate the field density, D_F, from 2 and 3.

5) Put sample on table and shake.

6) Determine volume of shaken sample.

7) Calculate the test density, D_T, from 3 and 6.

8) Calculate the relative compaction from

$$RC = \frac{D_F}{D_T} \times 100\%; \text{ must be } \geq 97\%$$

The problem first appeared when PTL calculated P_T about 112 lb/ft^3 whereas S&W had obtained 120 lb/ft^3 for the PSAR work.

RECORD OF TELEPHONE CONVERSATION

Date | Time | To be confirmed ( ) Yes ( ) No

FROM	TO
Name Alan Hosler	Name Tom Cox
Company or Dept. WPPSS	Company or Dept. NRC, Bethesda

SUBJECT(S) DISCUSSED WPPSS Nuclear Projects No. 1 & 4, Soil Density Testing

REMARKS

Mr. Cox was informed that we are having difficulty meeting ASTM-D2049 for our Soil Density Testing. I explained that the standard requires among other things that the sample be vibrated on a table that was capable of vibration of 60 hertz over a range of 0.002 to 0.025 inches of displacement, mean to peak.

Pacific Testing Laboratory (PTL), who is responsible for the field work, initially purchased a Syntron VP-86-B1 which had been calibrated and certified to comply with D2049. Later however the calibration was withdrawn when it was realized that the table did not satisfy D2049 in regards to the amplitude of vibration. PTL then purchased a Syntron VP-181-A1 which the catalog information said complied with D2049 and which was certified to provide an amplitude range of from .002 to .025 inches mean to peak, i.e. it satisfied D2049 in regards to the amplitude of vibration. However, after delivery when the table was calibrated, it was found that it did not meet the amplitude requirements.

UE&C then called the chairman of ASTM Committee, who is responsible for D2049. He stated that he was aware of the problems with D2049 and that it is planned to revise the standard to specify an amplitude of probably 0.015 inches peak to peak. I explained that in other calls UE&C learned that the Bureau of Reclamation uses .0075 and the Corps of Engineers uses 0.015 inches. I was not able to tell Tom if these were mean to peak or peak to peak values.

After the failure to have the new PTL machine satisfy D2049, I explained that soil samples were sent to the University of California, Berkley, for tests on a Syntron VP-200 which was a machine capable of vibration up to 0.025 inches mean to peak. The results of these studies showed a maximum density essentially independent of amplitude for a range of .007 to 0.015 peak to peak. Above and below these values the densities decreased. A slight variation in densities of about 1 lb/ft^3 was measured which is normal and is admitted to in the PSAR.

I explained that with these results it was decided to adjust the PTL machine to run between .007 and .015 inches and then continue with the production testing. This was attempted on the evening of January 9,

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Record of Telephone Conversation (continued)
From: Alan Hosler
To: Tom Cox

1976. However these amplitudes could not be obtained by modification to the machine. I said that the machine was then restored to its original condition and was to be recalibrated and certified for the maximum amplitude obtainable.

I told Tom that we were not at this time in a position to tell him what the final resolution of the problem would be. We are currently attempting to purchase a vibration table that would have the capability to provide the required amplitude. I did not go into detail in terms of our plan of action for the next few days. I did tell Tom that I would telecopy to him a copy of Duane Reinberger's Telephone Conversation Record to Bill Albert and also a copy of my meeting minutes of January 10, 1976.

Tom replied that he was not sure what action he should take but it did not seem like a stop in work was required. I replied that we would continue with the recompactions but no concrete would be placed over the backfill until the problem was resolved. The NRC would be informed of our final plan of action. I concluded by making the following points:

1. We are making six recompaction passes and all evidence indicates that the soil is reaching in maximum compactness after only 2 passes.

2. Data to date shows that we are within 1 to 2 lbs/ft^3 of the maximum density.

3. Everyone contacted is running tests at about 0.0044 inches peak to peak and we have found no one that complies with D2049 in this regard.

4. We have no reason to believe we have any soil recompacted to less than 97% relative density, but to prove this we will require additional testing on other machines.

Tom asked some questions on the basic testing procedure which I could not answer but said I would investigate. (This was done and telecopied to Tom on 1/13/76).

AGH:vh

RECORD OF TELEPHONE CONVERSATION

Date 1-10-76 Time 4:30 P.M. To be confirmed ( ) Yes ( ) No

FROM	TO
Name DL Renberger, NO Strand, T. Houchins, CB Organ	Name W. Albert
Company or Dept. WPPSS	Company or Dept. NRC, Region V

SUBJECT(S) DISCUSSED WPPSS NUCLEAR PROJECTS NO. 1 AND 4

TELEPHONE REPORT TO NRC REGION V REGARDING SOIL RECOMPACTION STATUS

REMARKS Mr. Albert, the NRC Region V Inspector for the WPPSS Nuclear Projects No. 1 and 4 was contacted at his home on Saturday, January 10, 1976 for the purpose of reporting the status of the recompaction situation at the WNP-1 and 4 Projects.

Mr. Albert was informed that the WNP-1 and 4 PSAR commited to measurements of soil densities, utilizing the ASTM Standard No. D2049-69, and that this Standard specified that a vibratory table be provided with an amplitude variable between .005 and .025 inches (actual minimum specified amplitude is .002 inches). The Standard further says that for determining maximum density, that the vibrator control should be set at maximum amplitude. Mr. Albert was informed that the density measurements taken by Pacific Testing Laboratory did not correlate with the original tests run by Shannon and Wilson and reported in the WNP-1 and 4 PSAR. The maximum densities were running lower with the Pacific Test Lab machine. Mr. Albert was informed that the shaker tables were calibrated and found to not correlate with the ASTM Standard. The variability of maximum density with amplitude of the table was described to Mr. Albert with the point being made that a literal compliance with the ASTM Standard would mean operating the table at .025 inch amplitude, whereas the maximum density could be down in the range of .007 inches amplitude.

We have thus pretty well concluded that the literal compliance to the ASTM Standard was not desirable or necessary.

Mr. Albert was informed that at the Supply System's request, Pacific Testing Lab replaced the shaker table that did not correlate with the original Shannon and Wilson table with a new one and that data from the new table did correlate. However, samples were taken and tested on the Shannon and Wilson table, the new PTL machine and a machine at Berkeley, which had a variable amplitude which permitted running the entire density curve as a function of amplitude. These correlation tests showed agreement between the Shannon and Wilson machine and the new PTL machine and indicated that the maximum density was about two pounds higher as measured on a Berkeley machine than as shown on each of the other two machines.

The Supply System indicated that work on recompaction had been on "Hold" during this time of investigation of calibration of the machines, but that plans were being made to proceed with further recompaction in the WNP-1 Spray Pond area starting Monday, January 12, 1976. The basis for proceeding would be the correlation now known between the machines, the fact that compaction is done with an eight-inch lift and six passes and it is known that maximum densities are reached

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after about the second pass. Therefore, the Supply System has good confidence in the actual density of the material being compacted. It was indicated that the machine at the site was being certified today as to the actual amplitude on the machine, so that all data will be traceable to a given amplitude. It was also indicated that the Supply System would have NCR control over the activities and won't put in any grounding grids or mud mats on top of the recompacted areas until such time as further definition of the testing technique to be actually used is obtained.

WPPSS indicated that we were attempting to purchase a variable amplitude machine similar to that at Berkeley in order to permit a full curve of density versus amplitude to be developed, and then rechecked at about two-week intervals during the compaction process. This would allow us to continusouly insure that compaction densities are measured against the peak density that would be reached at optimum amplitude.

Mr. Albert asked if we had placed any mud-mats on compacted material that was questionable. We indicated "No, the only mud-mats that had been installed, or were under installation, were in the Containment Building, and there was only a two to three inch leveling layerof sand which was proof-roled over the Ringold."

The Supply System emphasized that this was not a reportable deficiency under 10CFR50 since at this time, we have no evidence that material of inadequate density has been actually placed.

Mr. Albert requested that the Supply System communicate the situation to the Bethes office of Division of Reactor Licensing on Monday, January 12, to secure a more technical review of the situation associated with the ASTM Standard and our existing measurement techniques and plans.

Following that contact, we will get back in touch with Mr. Albert to discuss possibl letter report to Region V.

DLR:ho

cc: WD Blair
RE Dellon
AG Hosler
TJ Houchins
CE Love
CB Organ
DL Renberger
ER Rybarski
NO Strand
JP Thomas
OE Trapp
DH Walker
JE Woolsey
WNP-1/4 Eng. Services
Chrono

January 12, 1976

Distribution

A. G. Hosler
AGH 1-12-76

t: MEETING MINUTES - REVIEW OF WNP-1/4 SOIL DENSITY TESTING - JANUARY 10, 1976

Distribution:
RE Dellon
JE Woolsey
VB Mody
JL Kemp
Eng. Files (4)
JP Thomas
CB Organ
OE Trapp
AG Hosler (2)
TJ Houchins
CE Love
ER Rybarski
NO Strand
RA Chitwood
WD Bainard
DH Walker

Attendees:
J. P. Thomas
C. B. Organ
O. E. Trapp
A. G. Hosler
T. J. Houchins
C. E. Love
E. R. Rybarski
N. O. Strand

Mr. Renberger opened the meeting by stating that the purpose of the meeting was to review the status of the WNP-1/4 soil density testing and then determine if we had a 10CFR50.55(e) incident.

Mr. Organ then presented the following summary of the activities concerning soil testing to date:

ASTM-D2049 requires that the sample table be capable of vibration at 60 Hz over a range of 0.002 to 0.025 inches mean-to-peak (m-p), and that the maximum density be determined at the maximum amplitude.

In Appendix 2P of the PSAR (Pg. 2P D-7), it is stated that the maximum and minimum density testing for the Site investigations, and the development of the compaction control were done in accordance with ASTM-D2049-69. The Shannon & Wilson (S&W) vibrating table, a Syntron model VP-86-B1, has been recently calibrated for a maximum mean-to-peak amplitude of about .005 inches. Therefore, the information presented in the PSAR was not developed in accordance with D2049 in regards to the amplitude range for vibration.

Pacific Testing Laboratory (PTL) initially purchased a Syntron model VP-86-B1 which was calibrated and then certified by Boecon to satisfy D2049. Boecon later withdrew the certification when they realized it didn't satisfy D2049 in regards to the amplitude of vibration. This table provided maximum densities about 8 lbs/ft^3 lower than that obtained by S&W. S&W determined (by accelerometers) that the table's maximum amplitude with a 250 lb. load was 0.0019 inches m-p. This low amplitude explained the inability to obtain correlation between the S&W data (i.e., the PSAR data) and the PTL data; that is, the 8 lbs/ft^3 difference.

PTL then purchased a Syntron VP-181-A1 which the catalog information said complied with D2049 and woud provide an amplitude range of 0.002 to 0.025 inches m-p. When tested by S&W with accelerometers, however, this machine could only provide about 0.004 m-p with a 250 lb. load. At this time all Class A backfill activities were placed on "hold" (approximately 12/8/75).

UE&C then called the Chairman of the ASTM Committee responsible for D2049, Al Hussaini, (UE&C telecon 1590). He stated that he was aware of the problems with D2049 and that it is planned to revise the standard to specify an amplitude of 0.015 inches, probably p-p. In other calls, UE&C learned that the Bureau of Reclamation uses .0075 and the Corps of Engineers uses 0.015 inches, both m-p.

After the failure to have the new PTL machine satisfy D2049, soil samples were sent to the University of California, Berkeley, for tests on a Syntron VP-200 and a Material Testing System table. The VP-200 machine has a vibration range up to 0.025 m-p (i.e., satisfies D2049 in this regard). The results of these studies showed a maximum density essentially independent of amplitude for a range of .007 to 0.015 m-p (S&W indicated 0.003 to 0.016 inches). Above and below these values the densities decreased. A slight variation in densities (about $\pm$ 1 lb/ft^3) was measured which is normal. The PSAR admits to about a 2 lb/ft^3 variation (Pg. 2P D-4).

With these results, it was decided to adjust the PTL machine to run between 0.007 and 0.015 inches. Production runs would then be run at the amplitude determined by the Berkeley test to give the maximum density. On the evening of January 9, 1976, Soil Testing Company attempted to modify the PTL Syntron VP-181-A to provide a maximum amplitude of 0.015 inches. However, the maximum obtainable amplitude obtained was determined optically as 0.0055 inches. It was then decided to restore the machine to its original condition and have Soil Testing Company calibrate and certify the machine for the maximum amplitude obtainable in this condition (probably about .0044 m-p).

Mr. Organ then suggested the following plan:

Release the "hold" on Class A backfill activities on 1/12/76 and run production tests on the certified PTL table. Control the processes by NRC to prevent concrete being placed in Class A backfill areas.

Obtain a production test machine with a minimum variable range from .007 inches to .015 inches (m-p). Take sieve samples and determine the density-amplitude curves for each gradation. Determine the setting for the maximum density and run the production tests at this amplitude. The density-amplitude curve would be rechecked every two weeks. If any samples fell outside the gradation range, a special density-amplitude curve would be run. For past tests, run at 0.0044 inches, we would correlate with new samples.

Should the efforts to purchase a new machine of acceptable range prove futile, then an identical approach would be used except that families of curves for significant gradations would be run at Berkeley and data run at the 0.0044 inch amplitude would be correlated to the Berkeley data. Production tests would continue to be run on the present VP-181-A1 at maximum amplitude. Correlation control would be by periodic calibration of the PTL VP-181-A1 combined with periodic reverification of the Berkeley curves.

It was also decided that Region V should be informed of the problem that day, if possible (this was done). However, it was agreed that this was not a reportable deficiency under 10CFR50.55(e) since at this time we have no evidence that material of inadequate density has been placed.

It was also decided that NCR control over the activities would continue and that no mud mats would be placed over the recompacted areas until the problem is resolved.

Mr. Organ made the following concluding statements:

1) We are making six recompaction passes for each 8 inch lift and all evidence indicates that the soil is reaching its maximum compactness after only 2 passes.

2) Data to date shows that we are within 1 to 2 pounds of the maximum density.

3) Everyone contacted is running tests at amplitudes less than .025 inches and we have found no one that complies with D2049 in this regard.

4) We have no reason to believe we have any soil recompacted to less than 97% relative compaction but to prove this we will require additional testing on other machines.

AGH:km

Docket Nos.: 50-460
and 50-513

OCT. 22 1975

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LWR 2-3 Rdg
Docket Files (2)
TCox

A. Schwencer, Chief, Light Water Reactors Branch 2-3, DRL

WNP-1 - EXAMINATION OF EXCAVATIONS

Our SER, Section 2.5.2, page 2-34, states that "a staff geologist will examine the open excavations at the appropriate time."

Applicant has notified the LPM, Tom Cox, of dates the WNP-1 excavation will be available for examination. LPM has accordingly informed R. McMullen, SAB.

After about 11/1/75, WNP-1 spray pond excavation will have been backfilled as necessary, the GSB will also have been backfilled, but in the containment excavation the Ringgold formation will still be exposed. The containment mudmat will be poured starting approximately 11/13/75.

Copies of communications from applicant, dated 10/16 and 10/17, are attached.

Original Signed by

T. Cox, Project Manager
Light Water Reactors Branch 2-3
Division of Reactor Licensing

Attachment:
1. Ltr to R. Boyd dtd 10/16/75 from N. Strand
2. Record of Telephone Conversation to T. Cox from A. Hosler

ccs: R. McMullen
C. Stepp
W. Gammill

8605290127 PDR

OFFICE ▶	x7886/LWR2-3					
SURNAME ▶	TCox:rm					
DATE ▶	10/ /75					

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

Washington Public Power Supply System
A JOINT OPERATING AGENCY

P. O. Box 968 3000 Geo. Washington Way Richland, Washington 99352 Phone (509) 946-9681

October 16, 1975
GO1-75-227

Docket Nos. 50-460
50-513

Mr. Roger Boyd, Acting Director
Division of Reactor Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: WPPSS NUCLEAR PROJECTS NOS. 1 & 4
WNP-1 EXCAVATION

Dear Mr. Boyd:

In response to PSAR Question 2.54, the Supply System committed to notify the Regulatory Staff when major excavations were completed and logs and maps of these excavations were available. The major excavation for the WNP-1 Containment and General Services Building (GSB) is now complete. The logs and maps of these excavations will be available by October 24, 1975.

The installation of the ground grid under the Containment and GSB will begin about November 3 and the pouring of the Containment and GSB mud mats will begin about November 13, 1975. If the Staff desires to view the exposed Ringold Formation, they will need to be at the site before this time. The backfilling around the WNP-1 Containment and GSB will not begin until mid-1976.

We expect the excavation for the WNP-1 spray pond to be completed by November 4, 1975, and the logs and maps to be available about two weeks later.

Very truly yours,

DL Reinberger acting for

N. O. STRAND
Assistant Director
Generation & Technology

NOS:AGH:km

cc: CR Bryant - Bonneville Power Administration
TH Cox - Nuclear Regulatory Commission
JB Knotts - Conner, Hadlock & Knotts
EG Ward - Babcock & Wilcox
HW Phillips - United Engineers & Constructors

8605290144 PDR

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
RECORD OF TELEPHONE CONVERSATION

Date 10-17-75 Time 4:00 p.m. To be confirmed ( ) Yes ( ) No

FROM	TO
Name A. G. Hosler (AGHosler 10-17-75)	Name T. H. Cox
Company or Dept. WPPSS	Company or Dept. NRC

SUBJECT(S) DISCUSSED WNP-1 EXCAVATION

REMARKS

I explained to Tom that on about October 22 backfilling under part of the GSB would begin. If the Staff visits the site on November 11, they can examine the exposed Ringold Formation under all of the Containment but under only part of the GSB.

Also, the latest schedule for the excavation of the spray pond is to have it completed by October 29. Backfilling would begin immediately after density checks and proof rolling; about ½ to 2 days.

AGH:km

cc: JP Thomas
JE Woolsey
DD Tillson
TH Cox - NRC
J. King - UE&C
G. Valentenyi - UE&C
AG Hosler (2)
Eng. Files (4)

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50-513

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FIN Subject File
DJSkovholt, RL:ADQAO
RWCioni, RL:FIN/QAO
AHMeltz, RL:FIN/QAO

OCT 15 1975

Docket Nos. 50-460
and 50-513

Voss A. Moore, Assistant Director for Light Water Reactors-2, RL

WASHINGTON PUBLIC POWER SUPPLY SYSTEM: NUCLEAR PROJECTS NOS. 1 AND 4

As requested by Tom Cox, enclosed is the updated testimony of Dick Cioni of my staff regarding the financial qualifications of Washington Public Power Supply System to design and construct the subject facilities. The testimony is for CP/OL for Unit 1 and CP for Unit 4 Safety hearing scheduled for November 11, 1975.

Donald J. Skovholt
Assistant Director for Quality
Assurance and Operations
Division of Reactor Licensing

Enclosure:
As stated

cc: A. Schroeder
T. Cox
E. Coalbourne
C. Ketchen
P. Fine
J. Petersen

8409260216 5pp.

OFFICE	RL:QAO/FIN	RL:QAO/FIN	RL:ADQAO			
ext 7331 SURNAME	RWCioni, jr	AHMeltz	DJSkovholt			
DATE	10/15/75	10/ /75	10/ /75			

Form AEC-318 (Rev. 9-53) AECM 0240

☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

OCT 15 1975

FINANCIAL QUALIFICATIONS

The Financial Analysis Staff prepared testimony in July 1975 for the August Supplement to the SER, which concluded that WPPSS is financially qualified to design and construct WNP-1 and WNP-4. The staff has updated its review of the financial condition of the applicant and determined that there have been no financial developments to alter its favorable conclusion for WNP-1.

On October 8, 1975, we were informed by WPPSS of a delay in signing participation agreements (contracts to purchase a certain percentage of the capability of the facility) with the participants for WNP-4. This is the result of intervention under a Washington State Environmental Protection Act, which apparently requires individual utilities participating in projects of this nature to file environmental impact statements prior to entering into participation agreements. WPPSS has decided that the Participants could be subject to suit under the provisions of the Act if they signed participation agreements in WNP-4 at this time. Accordingly, WPPSS will sponsor the preparation of environmental impact statements for the participants in WNP-4. WPPSS estimates the May-June 1976 time period for completion of the filing of the environmental impact statements and the execution of participation agreements between WPPSS and the respective participants.

Additionally, in order to obtain permanent financing for WNP-4, WPPSS is required to have signed participation agreements covering the capability of the facility. Thus, WPPSS has slipped its present plans to sell revenue bonds and will drastically limit current expenditures for WNP-4 until May or June of 1976. WPPSS has a financial limitation on expenditures of $100

million total for WNP-4 and WNP-5. The $100 million has been obtained by the issuance of revenue bonds secured by option agreements. The option agreements give the signer an option to obtain a specific share of the facility capability by signing a participation agreement and provide an interim vehicle for initial project financing to a maximum level of $100 million prior to the execution of participation agreements. WPPSS has submitted an application for WNP-5 which is pending. Because of the schedule differences between WNP-4 and WNP-5, most of this money is available for WNP-4, but it is not certain at this time if it will be sufficient to cover all commitments. One significant cost item is the Energy Research and Development Administration enrichment services contract which increases from a few million to over $25 million upon receipt of a construction permit for WNP-4.

Based on the preceding analysis and a change in the original assumption that WNP-4 participation agreements would be signed by the time of the hearings, as reported by WPPSS in its May 1975 financial information submittal, we have determined that the applicant has not provided sufficient evidence at this time to demonstrate to the Commission their financial qualifications to carry out the design and construction activities for WNP-4 pursuant to 10 CFR 50.33(f). However, the foundation for this evaluation is solely that the applicant failed to obtain signed participation agreements which are necessary to obtain permanent financing for WNP-4 due to a recent interpretation of the Washington State Environmental Protection Act requiring WPPSS participants to file environmental impact

statements. Over its long past history, WPPSS has issued revenue bonds, rated "AAA" by Moody's, based on similar contractual arrangements to permanently finance its other projects. When the applicant obtains the signed participation agreements, we feel submittal of such information will be sufficient for the Financial Analysis Staff to find the applicant financially qualified to design and construct WNP-4.

Docket File

Docket Nos. 50-[illegible]
and 50-513

OFFICE ▶	[illegible]					
ext 7492 SURNAME ▶	EJSkovholt:j	1				
DATE ▶	10/ /75					

R. Heineman, Director, Division of Technical Review, NRR

TECHNICAL ASSISTANCE REQUEST

Your assistance is requested for the following:

PLANT NAME: WNP-1,4

DOCKET NUMBERS: 50-460, 50-513

RESPONSIBLE BRANCH: LWR 2-3

CONTACT: Thomas Cox, Project Manager (x7806)

TECHNICAL REVIEW BRANCH: Containment Systems Branch
Mechanical Engineering Branch
(others as specified by DTR)

TARGET COMPLETION DATE: October 15, 1975
December 1, 1975
(see Description of Request)

DESCRIPTION OF REQUEST: Review and evaluate applicant's submittal (WPPSS letter to staff dated 9/3/75) concerning loads on reactor vessel support structure for certain postulated LOCA's. As part of the report on the generic concern for reactor pressure vessel supports, WPPSS has presented a revised subcompartment pressure differential analyses based on their recent addition of guard pipes on reactor vessel hot and cold legs within the reactor compartment. Project staff requests prompt review of guard pipe design and subcompartment differential pressure analyses in order to avoid carrying this issue as an open item into the post CP period. A radiological safety hearing on this application has been tentatively scheduled by ASLB for 11/4/75, with testimony required by 10/15/75.

8605290620 PDR

To meet hearing requirements, the requested target dates are staged: 10/15/75 for review of subcompartment differential pressure calculations and guard pipe design; and 12/1/75 for report to DRL on overall report.

Original Signed by
A. Schwencer

A. Schwencer, Chief
Light Water Reactors Branch 2-3
Division of Reactor Licensing

cc: W. McDonald
J. Panzarella
R. Tedesco
G. Lainas
J. Knight

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9/ /75	9/ /75

OCT. 01 1975

R. Heineman, Director, Division of Technical Review, NTR
D. Skovholt, Assistant Director for Quality Assurance & Operations, DRL

TECHNICAL ASSISTANCE REQUEST

Your assistance is requested for the following:

PLANT NAME: WNP-1,4

DOCKET NOS: 50-460 and 50-513

RESPONSIBLE BRANCH: LWR 2-3

CONTACT: Thomas Cox, Project Manager (x7886)

TECHNICAL REVIEW BRANCHES: Mechanical Engineering Branch
Effluent Treatment Systems Branch
Reactor Systems Branch
Radiological Assessment Branch

TARGET COMPLETION DATES: October 15, 1975
November 4, 1975
(see Description of Request)

DESCRIPTION OF REQUEST: Radiological safety hearing for WNP-1,4 is tentatively set for 11/4/75 in Richland, Washington, with ASLB expecting all staff testimony in by 10/15/75.

At ASLB meeting with parties on 9/29/75, Boards wishes were expressed regarding safety areas they intend to probe during hearing. As pointed out in memo to R. Heineman from A. Schwencer dated 8/13/75, additional areas of Board inquiry would be pointed out as identified. This memo is to identify those areas and request appropriate technical assistance.

8605290026 PDR

1. Appendix I - Testimony is being prepared with RAB as lead branch, must be planned to obtain all required staff approvals including OELD, in time to be sent from OELD to ASLB on 10/15/75. Attendance of appropriate technical reviewer is required at the hearing.

2. Radwaste System Calculations - Hearing testimony is being prepared, schedule is same as for item 1 above, and attendance of appropriate technical reviewer is required at hearing.

3. Applicant Organization and Qualification to Conduct Technical Operations - Board has requested that parties be prepared to discuss Applicant's qualifications, preparedness, and staff evaluation of same. No written testimony is required but presence of qualified witness is requested by Board. DRL requests hearing attendance by reviewer from ISEP or OLB. No written testimony is required.

4. Financial Qualifications - Board has specifically requested qualified witnesses in this review area. Applicant will present latest financial data including bond rating, interest value, market changes and current applicant plans. Staff review was completed on material received June 2, 1975. DRL requests hearing attendance by financial qualifications reviewer. No written testimony is required.

R. Heineman
D. Skovholt

5. Reactor Pressure Vessel Supports - Written testimony is required on this issue to present status of identified concern, significance relative to the WPPSS application, staff requirements of this applicant, and staff evaluation of applicant's ability to effectuate changes if required by future resolution of this generic issue. Hearing attendance by technical representative is not requested, but written testimony must be submitted to Board, through OELD, by 10/15/75.

6. ECCS Evaluation - Testimony is now available in draft form, requires review and concurrence by RSB on schedule commensurate with 10/15/75 submittal to Board. DRL requests hearing attendance by sponsor of RSB testimony.

Original Signed by
A. Schwencer

A. Schwencer, Chief
Light Water Reactors Branch 2-3
Division of Reactor Licensing

cc: W. McDonald
V. Stello
T. Novak
H. Denton
J. Kastner
R. Tedesco
J. Collins
R. Maccary
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DATE ▶	10//75	10//75	10//75			

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AUG 27 1975

David L. Wigginton, Senior Staff Assistant, Division of Reactor Licensing

SEPTEMBER BLUE BOOK - SIGNIFICANT DELAYS

Crystal River-3 (OL) (Page 2-20)

Issuance of Supplement No. 2 to SER is being slipped from October 1, 1975 to January 7, 1976 to accomodate expanded financial evaluation due to adding owners, to review new meteorological data and to allow TR more time to complete the ECCS-FAC analysis. This 3 month slip will not impact PDD which, incidently, has been improved from May 1976 to February 7, 1976.

Davis-Besse 1 (OL) (Page 2-21)

Schedule is being slipped 1 month at Draft SER completion and all remaining milestones except PDD which will not be impacted. Purpose of slip is to allow time to resolve open items (over 12) and to allow TR more time to complete ECCS-FAC analysis (being extended from August 15, 1975 to January 12, 1976).

North Anna

The controlling SER inputs will be delayed up to three months due to late applicant submittals. LPM is planning Pre-ACRS SER supplement to minimize schedule impact. Best estimate at this time indicates SER, ACRS meeting and Post ACRS SER supplement will slip 2 months. We do not plan slip start of hearing due to these slips. Since all substantive issues will be known following the ACRS meeting.

WNP 1 & 4

DRL has requested OELD efforts to move up start of Rad Safety Hearing from November 1975 to September 23, 1975 since all safety issues except ALAP will be resolved by then. Advantages will be a 1 month improvement in PDD. We have also asked OELD to assist in obtaining an early ASLB action needed to issue an expanded LWA-2 to prevent a construction stoppage when site activities presently authorized are completed.

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Pebble Springs

Principally due to lack of timely C.P.S.G.S. review (a chronical management problem not confined to this review) plus late inputs from TR (including a third round of requests from EI&C and possibly from RSB) will cause SER issuance to slip at least 3 months. All subsequent milestones will be affected by at least 2 months.

Original Signed by
A. Schwencer

A. Schwencer, Chief
Light Water Reactors Branch 2-3
Division of Reactor Licensing

Attachments:
Logic Networks for
Above Projects

cc: V. A. Moore
L. Engle
R. Ferguson
T. Cox
C. Stahle

OFFICE ▶	RL:LWR 2-3					
SURNAME ▶	ASchwencer:pg					
DATE ▶	8/ /75					