



Duquesne Light

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October 3, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. George W. Knighton, Chief
Licensing Branch 5
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Response to Draft SER Open Item Nos. 175 and 176

Gentlemen:

Attached are the responses to the NRC Geotechnical Engineering Section's Draft SER Open Item Nos. 175 and 176. Please note in the response to Open Item 176 that DLC is requesting confirmatory status for this item.

DUQUESNE LIGHT COMPANY

By *E. J. Woolever*
E. J. Woolever
Vice President

JDO/wjs
Attachments

cc: Ms. M. Ley, Project Manager (w/a)
Mr. E. A. Licitra, Project Manager (w/a)
Mr. G. Walton, NRC Resident Inspector (w/a)

SUBSCRIBED AND SWORN TO BEFORE ME THIS
3rd DAY OF October, 1984.

Anita Elaine Reiter
Notary Public

ANITA ELAINE REITER, NOTARY PUBLIC
ROBINSON TOWNSHIP, ALLEGHENY COUNTY
MY COMMISSION EXPIRES OCTOBER 20, 1986

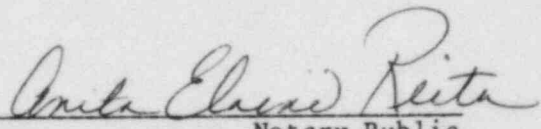
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COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF ALLEGHENY)

On this 3rd day of October, 1984, before me, a
Notary Public in and for said Commonwealth and County, personally appeared
E. J. Woolever, who being duly sworn, deposed and said that (1) he is Vice
President of Duquesne Light, (2) he is duly authorized to execute and file
the foregoing Submittal on behalf of said Company, and (3) the statements
set forth in the Submittal are true and correct to the best of his
knowledge.


Notary Public

ANITA ELAINE REITER, NOTARY PUBLIC
ROBINSON TOWNSHIP, ALLEGHENY COUNTY
MY COMMISSION EXPIRES OCTOBER 20, 1986

Draft SER Open Item No. 175 (Section 2.5.4.3.3) - Measured, Estimated, and Allowable Settlement Data:

Based on the settlement data given in the FSAR Figures 2.5.4-20, and 2.5.4-46, Table 2.5-2 gives a comparison of the estimated and measured total settlement at the corners of a few Category I structures. This table also gives the percentage of structural loading of these structures as of January 10, 1984, provided by the applicant during the geotechnical audit by the staff in January 1984. The applicant has been requested to docket this data, including a comparison of up-to-date measured settlements with predicted values, in a tabular form in the forthcoming amendment of the FSAR. The applicant needs to provide the total loading including the equipment loading, etc. in addition to civil, steel, and concrete loading.

The applicant must include, in the forthcoming amendment of the FSAR, the following information:

1. Allowable total settlement and tilt of safety related structures.

Response:

FSAR Figure 2.5.4-46, Amendment 8 (attached), has been revised to include the measured settlements of BVPS-2 structures as of January 1, 1984. The approximate percentage of total structural load, including major pieces of equipment, has also been added to this figure.

FSAR Figure 2.5.4-20, Amendment 8 (attached), has been revised to indicate a change to the predicted settlement of the valve pit as a result of an increase in the design load shown in FSAR Table 2.5.4-4, Amendment 6. FSAR Figure 2.5.4-41, Amendment 8 (attached), has been revised to agree with the loads shown in Table 2.5.4-4.

A comparison of measured and predicted settlements of plant structures can be made by comparing FSAR Figures 2.5.4-20 and 2.5.4-46.

Allowable total static settlements of the individual BVPS-2 structures have not been determined. However, a prediction of the static settlement of each structure has been made (FSAR Figure 2.5.4-20) to provide an indication of the behavior of plant structures. An extensive settlement monitoring program has been instituted at BVPS-2 to verify the validity of the predictions. The settlement monitoring data will ultimately be used to reassess the predicted settlements of each structure taking into consideration the trends shown by the measured data at each settlement monitoring point. The individual plant structures are not specifically designed for differential settlement or tilt of the foundation. However, observed settlements are periodically reviewed so that any unusual movements can be evaluated on a case-by-case basis.

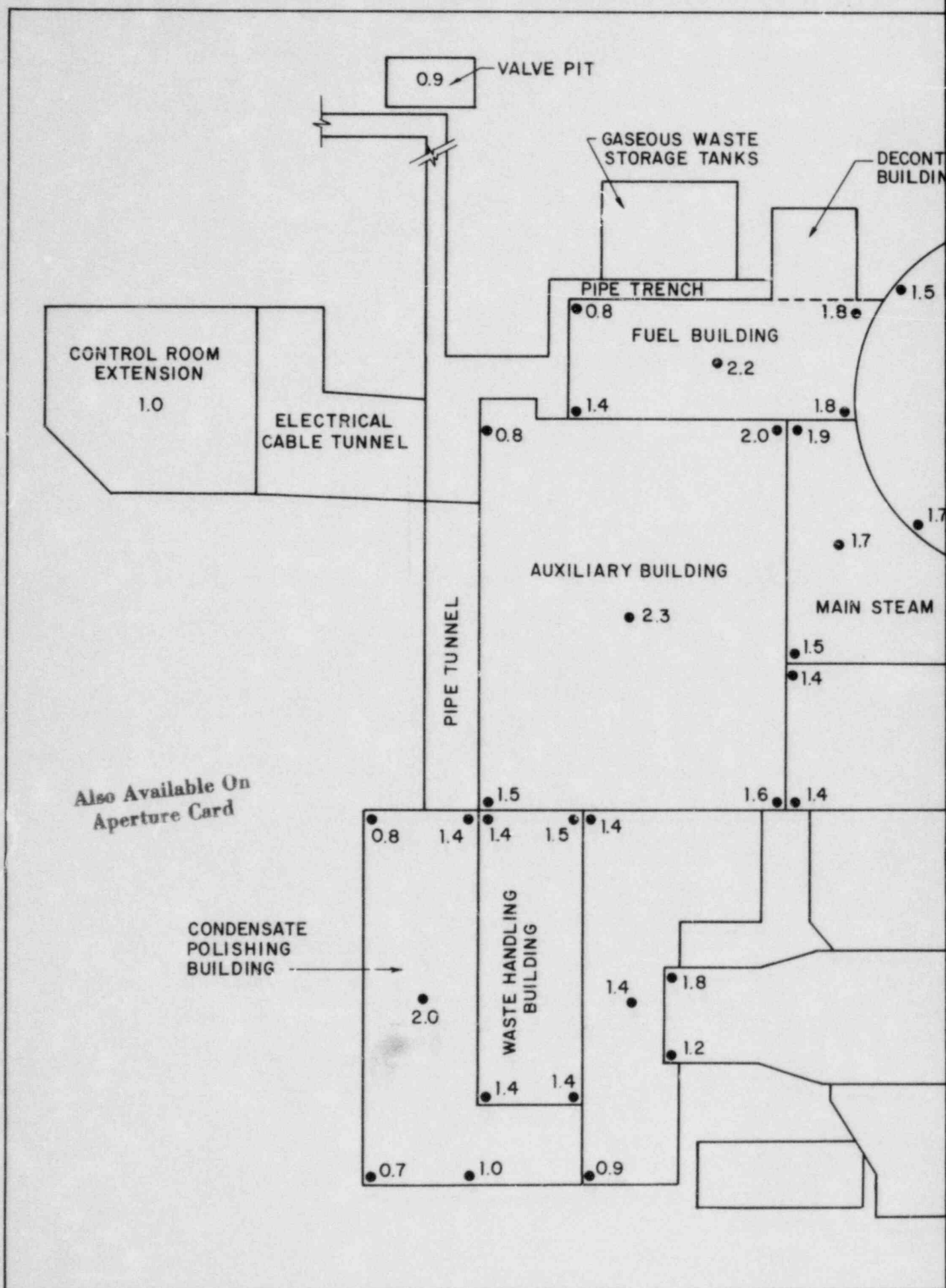
Draft SER Open Item No. 176 (Section 2.5.4.3.3) - Differential Settlements:

The applicant must include, in the forthcoming amendment of the FSAR, the following information:

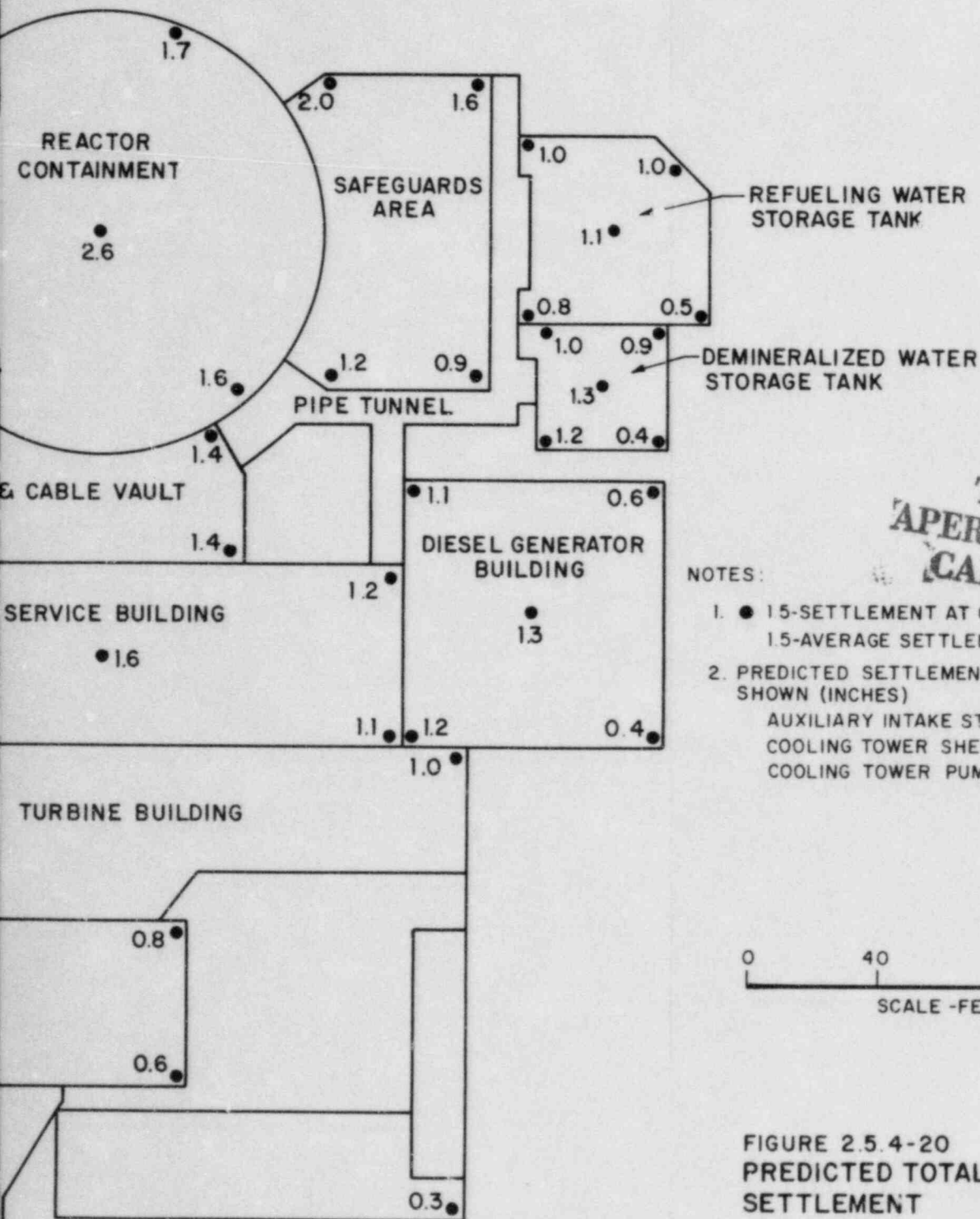
- ...2. Allowable differential settlements between structures, and those between structures and pipes buried in the soil. For the allowable settlement of buried pipelines, the applicant may provide an analytical evaluation of the ability of the pipes to withstand differential settlements without exceeding allowable pipe stresses.

Response:

DLC is currently implementing a program to reconcile the qualification of BVPS-2 piping systems with the design input and as-installed configurations. As part of this program, the adequacy of piping to withstand the effects of expected differential settlements will be demonstrated by identifying the predicted and allowable differential settlements between structures that are spanned by piping and between structures and buried piping extending out into the yard. It is anticipated that this program will be completed in February 1986. The aforementioned predicted and allowable differential settlements will be incorporated into a subsequent FSAR amendment. Therefore, it is requested that the submittal of this information be considered a confirmatory item.



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NOTES:

1. ● 1.5-SETTLEMENT AT GIVEN POINT (INCHES)
1.5-AVERAGE SETTLEMENT (INCHES)
2. PREDICTED SETTLEMENTS OF STRUCTURES NOT SHOWN (INCHES)
AUXILIARY INTAKE STRUCTURE: 0.4
COOLING TOWER SHELL FOUNDATION: 1.0
COOLING TOWER PUMPHOUSE: 1.4

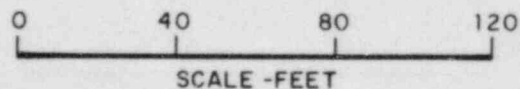
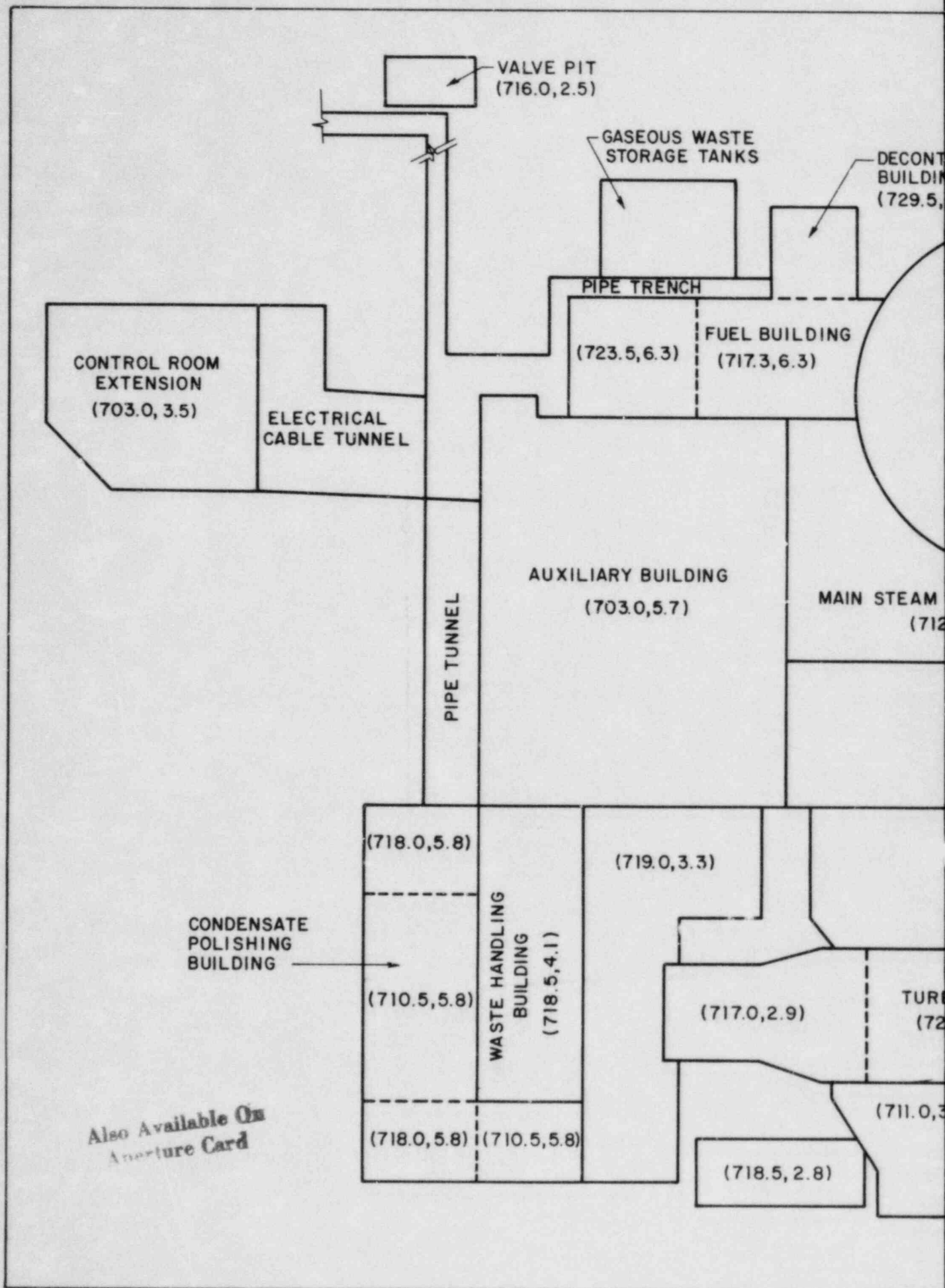
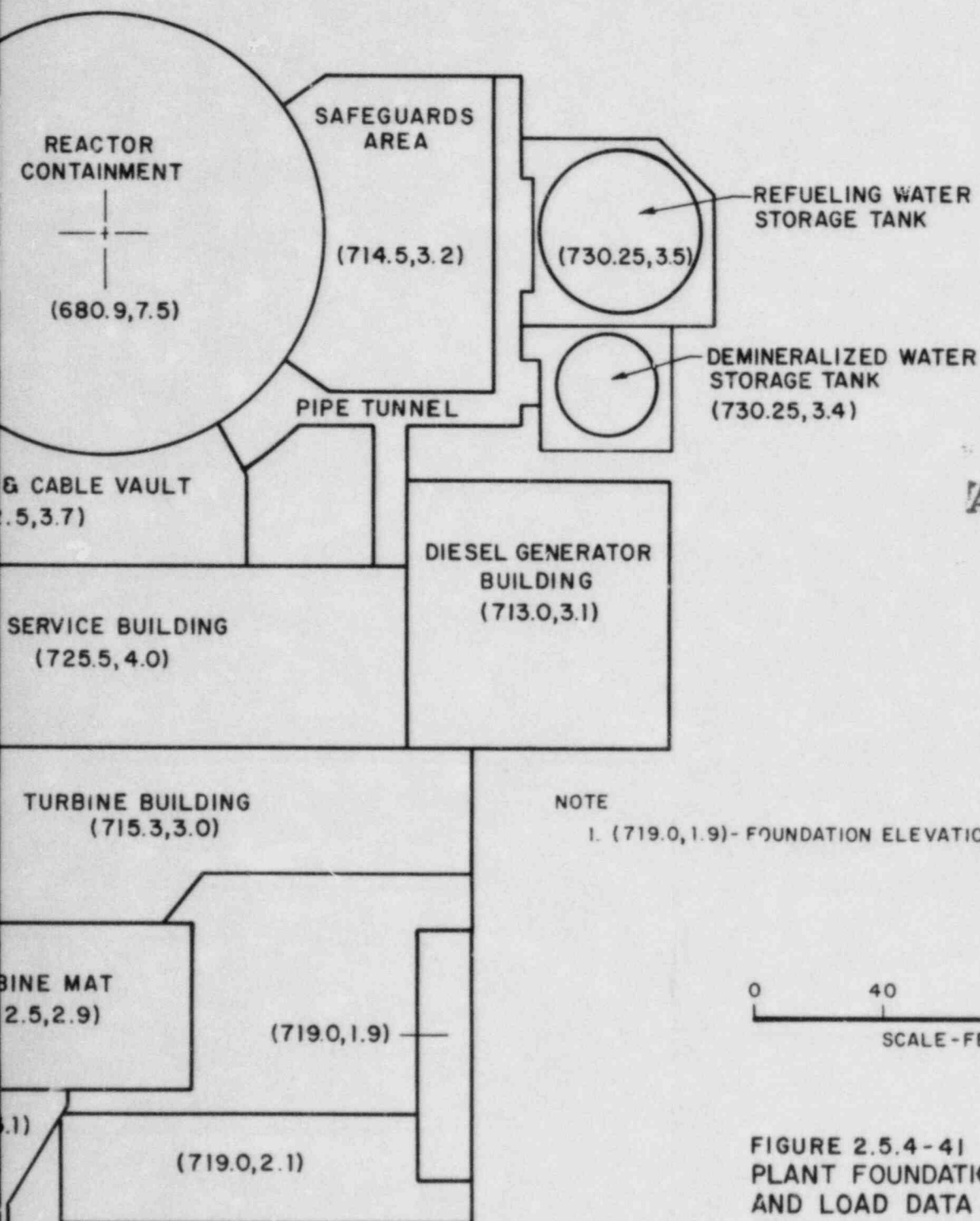


FIGURE 2.5.4-20
PREDICTED TOTAL STATIC
SETTLEMENT
BEAVER VALLEY POWER STATION-UNIT 2
FINAL SAFETY ANALYSIS REPORT

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NOTE

1. (719.0, 1.9) - FOUNDATION ELEVATION IN FEET, LOAD IN KSF

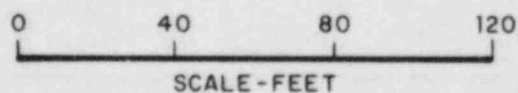


FIGURE 2.5.4-41
PLANT FOUNDATION ELEVATION
AND LOAD DATA
BEAVER VALLEY POWER STATION-UNIT 2
FINAL SAFETY ANALYSIS REPORT

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