2-5-23

UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
WISCONSIN PUBLIC SERVICE CORPORATION	)	
WISCONSIN POWER AND LIGHT COMPANY	)	Docket No. 50-305
AND	)	
MADISON GAS AND ELECTRIC COMPANY	)	
	)	
(Kewaunee Nuclear Power Plant)	)	

AFFIDAVIT IN SUPPORT OF
MOTION FOR SUMMARY DISPOSITION

State of Maryland)
) ss
County of Montgomery)

The undersigned, L. P. Crocker, being first duly sworn, hereby deposes and says as follows:

1. A statement of by background and qualifications has been filed and is a part of the Docket in this matter.

2. Contention 3.14.2.1

For Kewaunee, the preferred source of emergency power is from off-site sources. The plant is linked via the local substation through four separate transmission lines to various parts of the applicant's power distribution grid. While these lines normally serve to carry the plant output to the applicant's

grid, each line also is capable of supplying the plant emergency power needs. The simultaneous failure of all four lines at the precise moment of a postulated plant accident is highly unlikely. Nonetheless, in accordance with General Design Criterion 17, the applicant has installed an on-site emergency power source.

For Kewaunee, the on-site emergency power source consists of two, redundant, diesel-engine generator sets. The machines installed are General Motors Corporation, Electro-Motive Division units, Model 999-20. They are large, relatively low speed machines. Each machine is rated at 3250 KVA or 2600 KW at a 0.8 power factor. The maximum 2000 hour ratings are 2860 KW, while the 30 minute overload ratings are 3050 KW.

Safety Guide 9 recommends that for the operating license stage of review, the predicted loads on the machines should not exceed the smaller of the 2000 hour rating or 90% of the 30 minute rating. Since 90% of the 30 minute rating is 2745 KW which is less than the 2000 hour rating, we have judged the machines on the basis of 2745 KW maximum load carrying capability.

The applicant has analyzed the loads anticipated on each machine and has tabulated these data in Table 8.2-1 of the FSAR. This table indicates that the maximum automatic loading on each machine is equivalent to 2737 KW, occurring

during the 1-30 minute time span. This automatic sequenced loading is less than the 2745 KW rating figure obtained following the Safety Guide 9 guidelines. To assure that the machines are indeed capable of performing the intended service, the preoperational testing program will require that the actual loads on the diesel-engine generators be determined by test and that the maximum loadings on the sets be verified to be within the capability of the machines. This testing is summarized in Tables 13.1-1 and 13.1-2 of the FSAR. As with other plant tests, personnel from the Directorate of Regulatory Operations will oversee both the test procedure and the test results.

The intervenors contend that the applicants' estimated loads of 2766 Kw for each set are not sufficiently conservative and that a figure of 2904 KW would be a more realistic estimate of the loads during the first 30 minutes. The overall conservatism of the estimated loads is a matter of judgement at this time, since the loads are based upon motor power requirements taken from manufacturer's test data and handbooks , with efficiency factors applied. In my judgement, the applicant's estimates are realistic, but, as noted previously, the actual loads will be determined by test during the preoperational testing program so that prior to licensing we will have verification of the adequacy of the machines.

The intervenors quote a figure of 2766 KW, apparently taken from Table 8.2-1 of the FSAR. I should note that this does not represent the maximum estimated

loads placed on the machines during the automatic loading sequence. As displayed on the table, not all equipment is operating at the same time. Specifically, the motor operated valves (Step "0", on the table) will have either closed or opened as necessary within the first minute. After that, they cease to draw power and the 29 KW associated with their operation becomes available for other purposes. Thus, as indicated on the table, the maximum automatic sequenced loading is 2737 KW, and not the 2766 KW as stated by the intervenors.

Thus, I conclude that for reasons as stated above, the emergency on-site power sources meet the guidelines of Safety Guide 9 and are acceptable.

L. P. Crocker

Subscribed to and sworn before
me this 5th day of February, 1973

Notary Public

My Commission expires 7/1/74