



**Commonwealth Edison**

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September 27, 1982

Mr. Richard C. DeYoung, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject: Zion Station Units 1 and 2  
Operation at 100% Power  
NRC Docket Nos. 50-295 & 50-304

Dear Mr. DeYoung:

This is to request guidance from the Office of Inspection and Enforcement regarding operation at 100% power for Zion Station.

Zion recently attempted to implement an administrative program designed to define the acceptable boundaries of operation while operating at the steady state power level limit. The intent of this program is as follows:

1. To operate the units at a steady state power level of 100.0%.
2. To use hourly average calorimetrics for power control.
3. To exactly define the power level and time period that constitute a non-compliance.
4. To incorporate calorimetric uncertainty into the measurement of "Licensed Power Level" as long as there is complete certainty of remaining below the FSAR power limit.

Zion's program requires a hourly adjustment of power level to maintain 100.0%. The overall goal of this program is to operate at 100.0% as indicated by the hourly average calorimetrics.

The hourly power adjustments are required to compensate for variations in power level induced by system frequency shifts. It is not unusual to note a .5% power change over a one hour period due solely to frequency changes. Thus, it is obvious that slight variations above and below 100.0% will occur. The hourly adjustments represent the optimal method of compensation for these variations.

In addition, Zion Station has defined the power level and time period of measurement (8 hours) that constitutes a non-compliance. This effort was undertaken to provide guidance in an area in which none had previously existed.

The purpose of limiting the maximum steady state power level is to ensure that the plant is operating below the initial power level assumed in the safety analysis. This power level is 102% for Zion Station. Zion's definition of the maximum permissible steady state power level precludes ever exceeding 102%, even when the worst alignment of errors is considered. It also allows the hourly frequency shift and power adjustment process to take place without resulting in unnecessary Licensee Event Reports.

NRC Region III personnel have advised Zion not to implement this program because of the uncertainty regarding what constitutes a violation of the licensed power limit. Until this issue can be resolved, Zion has been advised to operate in a "conservative" manner with respect to this limit. However, the frequency induced power variations previously discussed require that the hourly "target" power level be .5% below the eight hour "violation" level. Thus, if 100.1% for an indicated eight hour average were to be considered a license violation, then the operator would have to adjust power level to 99.6% on an hourly basis to avoid a violation. This results in an estimated \$1,600,000 per year loss for Zion Station.

This problem is by no means unique to Zion Station. Frequency shifts occur in all grid systems, and all generating stations exhibit fluctuations around the 100% power level. In attempting to specify a detailed operating procedure and to define a violation, Zion has taken an aggressive approach in dealing with an issue that has been largely ignored throughout the industry. The approach that has been utilized is conservative, yet allows for efficient operation of the station.

It is requested that the Office of Inspection and Enforcement define what constitutes a violation of the licensed power limit. This definition should specify not only the power level but also the time period of measurement. The subject of calorimetric uncertainties should also be addressed.

By copy of this letter, the Office of Nuclear Reactor Regulation is requested to re-affirm the technical basis for the licensed power limit: that the plant be operated below the initial power level assumed in the safety analysis. It is Commonwealth Edison's position that an operating program which ensures that this technical basis will be met constitutes safe and proper operation and is consistent with the intent of the operating license.

Because of the significant financial penalties that are being incurred by operating in an overly conservative manner, Commonwealth Edison respectfully requests an expeditious response. Our personnel will be available at your convenience for further discussion on this subject.

R. C. DeYoung

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Please address any questions regarding this matter to this office.

Very truly yours,



W. L. Stiede  
Assistant Vice-President

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cc: H. Denton, NRR  
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J. Keppler, Region III

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