

November 7, 1985

Docket Nos: 50-369  
and 50-370

Mr. H. B. Tucker, Vice President  
Nuclear Production Department  
Duke Power Company  
422 South Church Street  
Charlotte, North Carolina 28242

Dear Mr. Tucker:

Subject: Supplemental Request for Additional Information on Safety  
Parameter Display System - McGuire Nuclear Station, Units 1 and 2

The NRC staff is reviewing the McGuire Safety Parameter Display System (SPDS) based upon your SPDS Safety Analysis and Implementation Plan submitted March 9, 1984, and your additional information of November 2, 1984, February 8 and August 13, 1985. We find that additional information identified in the enclosure is needed to conclude this review.

Your response to the enclosure is requested within 45 days of this letter. If you have questions regarding the enclosure, contact our project manager, Darl Hood, at (301) 492-8408.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

Original Signed By

L. L. Kintner for

Elinor G. Adensam, Chief  
Licensing Branch No. 4  
Division of Licensing

Enclosure:  
As stated

cc: See next page

DL:LB #4  
DHood/yt  
11/5/85

LA:DL:LB #4  
MDuncan  
11/5/85

DL:LB #4  
EAdensam  
11/6/85

Mr. H. B. Tucker  
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McGuire Nuclear Station

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## REQUEST FOR ADDITIONAL INFORMATION

### CONCERNING THE

### MCGUIRE UNITS 1 AND 2

### SAFETY PARAMETER DISPLAY SYSTEM

Each operating reactor shall be provided with a Safety Parameter Display System (SPDS). The Commission approved requirements for an SPDS are defined in NUREG-0737, Supplement 1. In the Regional workshops on Generic Letter 82-33 held during March 1983, the NRC discussed these requirements and the staff's review of the SPDS.

The staff reviewed the SPDS safety analysis and supplemental documents provided by Duke Power Company (Reference 1-4). The staff was unable to complete the review because of insufficient information. The following additional information is required to continue and complete the review:

#### PROCEDURES AND SYSTEMS REVIEW BRANCH

##### Parameter Selection

As a result of its review, the staff noted that the following variables are not proposed for the McGuire SPDS.

1. Hot Leg Temperature
2. RHR Flow Rate
3. Stack Monitor
4. Steam Generator (or steamline) Radiation
5. Containment Isolation

Hot leg temperature is a key indicator used in the ERGs (Revision 1, "ES-0.1, Attachment A," "Generic Instrumentation," page 3) to determine the viability of natural circulation as a mode of heat removal. Reference 1 indicates "NC System temperature" as a proposed variable, but does not specify hot leg temperature.

During RHR and ECCS modes of cooling when steam generators are not available, RHR flow is a key indicator to monitor the viability of the heat removal system. Steamline (or steam generator) radiation, in conjunction with containment radiation and reactor stack radiation, gives a rapid assessment of radiation status for the most likely radioactive release paths to accomplish the "Radioactivity Control" safety function. For a rapid assessment of Radioactivity control, the licensee has not demonstrated how radiation in the secondary system (steam generators and steamlines) is monitored by SPDS when the steam generators and/or their steamlines are isolated. The analysis should be expanded to include this discussion.

Containment isolation is an important parameter for use in making a rapid assessment of "Containment Conditions." In particular, a determination that known process pathways through containment have been secured provides significant additional assurance of containment integrity.

The above variables do, for given scenarios, provide unique inputs to the determinations of status for their respective CSFs, which have not been discussed by the licensee as being satisfied by other variables in the proposed McGuire SPDS list. The licensee should address these variables and their functions by: (1) adding the variables to the McGuire SPDS, (2) providing alternate added variables along with justifications that these alternates accomplish the same safety functions for all scenarios, or (3) providing justification that variables currently on the McGuire SPDS do in fact accomplish the same safety functions for all scenarios.

#### HUMAN FACTORS ENGINEERING BRANCH

##### Scope of SPDS

In its SPDS safety analysis, the licensee defines the McGuire SPDS as the six Critical Safety Function (CSF) color blocks that are driven by logic that is based on Westinghouse Owners' Group decision trees which are part of the symptom-oriented emergency procedures.

The staff finds this position unacceptable on the basis that the six CSF color blocks alone do not give sufficient information to accurately determine plant safety status. The staff requires that the actual value of each of the SPDS parameters be readily available to the operator.

It appears that this information may already be available on the Operator Aid Computer, of which SPDS is a part.

The licensee should clarify/redefine its position regarding the scope of the SPDS.

#### REFERENCE

1. Letter from H.B. Tucker (DPC) to E. Adensam (NRC) dated March 29, 1984, forwarding Revision 4 to response to supplement 1 to NUREG-0737.
2. Letter from H.B. Tucker (DPC) to H. Denton (NRC) dated November 2, 1984.
3. Letter from H.B. Tucker (DPC) to H. Denton (NRC) dated February 8, 1985
4. Letter from H.B. Tucker (DPC) to H. Denton (NRC) dated August 13, 1985.