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SUBJECT: Forwards response to Generic Ltr 89-06, Task Action Plan Item
 I.D.2, "SPDS."

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AEP:NRC:0773AE
GL 89-06

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
GENERIC LETTER (GL) 89-06 TASK ACTION PLANT ITEM I.D. 2-
SAFETY PARAMETER DISPLAY SYSTEM (SPDS) RESPONSE

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Attn: T. E. Murley

August 1, 1989

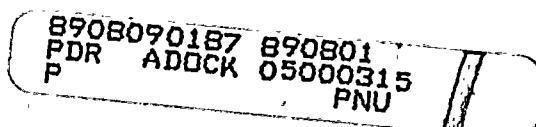
Dear Dr. Murley:

This letter responds to Generic Letter (GL) 89-06 dated April 12, 1989, received on May 8, 1989, concerning NUREG-0737 Task Action Plant Item I.D. 2 - SPDS. The following discussion is provided in accordance with paragraph three of the letter.

DISCUSSION

As pointed out in GL 89-06, NUREG-0737 Supplement 1 "...extracted the fundamental requirements for emergency response capability from the wide range of regulatory documents issued on the subject. It was written at the conceptual level to allow for a high degree of flexibility in scheduling and design." As we indicated in our response to GL 82-33 (AEP:NRC:0773 dated April 15, 1983), we also used the wide range of regulatory documents, specifically NUREGs -0585, -0660, -0696, and -0737, published respectively in October 1979, May 1980, February 1981, and November 1980, as conceptual guidance in procuring our SPDS from Westinghouse in May of 1980. Further, we believe the Westinghouse designed SPDS met the intent of the wide range of regulatory documents then available.

We also relied heavily on the ability of our vendor, Westinghouse, to obtain a favorable Nuclear Regulatory Commission Safety Evaluation Report (SER). The NRC did issue an SER on February 2, 1984 on the Westinghouse generic SPDS. Our SPDS Analysis Report was submitted in letter AEP:NRC:0531A dated June 19, 1981 and clarified by letters AEP:NRC:0531E, H, and I dated September 29,



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1982, April 3, 1985 and May 31, 1985, respectively. The Westinghouse design methodology, verification and validation program, and parameter selection were used for the Cook Nuclear Plant SPDS and as such were approved by the generic SER dated February 2, 1984.

CURRENT STATUS

In response to the above submittals, we received an SER dated August 12, 1985 that stated in part:

"We have reviewed the SPDS Safety Analysis Report for Donald C. Cook and conclude it is acceptable for IMEC to continue implementing its SPDS Program, but this is conditional to a satisfactory resolution of our concerns. Our review of the process variables selected for display on the SPDS identified the following concerns:

1. It is not clear that reactor coolant subcooling is displayed as a discrete variable. If a discrete subcooling monitor is provided for D. C. Cook in compliance with NUREG-0737, Item II.F.2, it should be considered for display in the SPDS.
2. It is not clear that a 'containment isolation' assessment is provided in the display system. Although valve position is provided for many 'major valves,' it is not clear that these constitute the set comprising 'containment isolation,' and it is not apparent that containment isolation is displayed as a discrete variable.
3. Apparently IMEC does not have instrumentation to monitor steam generator (steamline) radiation for an isolated steam generator. The control room operator will not be able to make a rapid assessment of radioactivity control when the steam generators and/or its steamlines are isolated.

Additional details on these concerns are provided in the enclosed Safety Evaluation. We recommend that either the above defined variables be added to the SPDS to provide unique data to the operator in evaluating critical safety function or that IMEC provide us with additional justification that they not be included."

We believe that we satisfactorily responded to these concerns in letters AEP:NRC:0531K, dated September 26, 1985, AEP:NRC:0678Z

dated September 8, 1986, and AEP:NRC:0773Y dated May 18, 1987. The reactor coolant subcooling is displayed on the SPDS top level/ICONIC display as a discrete variable. (It should be noted that the terms top level display and ICONIC are synonymous.) We have also proceeded to upgrade the containment isolation indications and plan to have containment isolation status available on a terminal that is adjacent to the SPDS ICONIC display terminals by the end of the 1990 refueling outages for both units.

We do not have instrumentation on the steam generator (steamline) to monitor radiation. We believe that the steam generator PORV radiation monitoring system is adequate to assess radioactivity when the steam generators and/or its steamlines are isolated. The concern for steam generator (steamline) radiation monitoring remains an open issue under consideration by the NRC and is discussed in submittals AEP:NRC:0678Z and 0773Y. The primary method for determining effluent releases is the Eberline RMS terminal which is adjacent to the SPDS terminal. NUREG-1342 describes this arrangement as satisfactory.

We have completed the GL 89-06 checklist to the best of our understanding of the specific questions and included it as an Attachment to this letter to show any additional Cook Nuclear Plant SPDS variations from the NRC requirements outlined in NUREG-1342.

We declared our SPDS operational, and have maintained operational status, since March 31, 1986, for Unit 1 and July 11, 1986 for Unit 2. Our SPDS was reviewed by the NRC during the February 1987 Detailed Control Room Design Review (DCRDR) audit. We responded to the auditor's comments, and have documented the status of our SPDS as requested in letters AEP:NRC:0678Z and AEP:NRC:0773Y.

CONCLUSION

Based on the vintage of our SPDS, we cannot certify to meeting all the requirements of NUREG-0737, Supplement 1, considering the information provided in NUREG-1342. We do believe that the state-of-the-art SPDS that we purchased in May 1980 met the intent of the directives published at the time. Furthermore, based on operator experience, we believe that by referring to sub-level displays and the separate RMS monitor, we adequately compensate for indications that are not available on the SPDS top level/ICONIC display.

While the Cook SPDS does not meet all of the requirements of NUREG-0737, we believe that we have demonstrated, during each NRC

Dr. T. E. Murley

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AEP:NRC:0773AE

review/inspection, an SPDS adequate to the post accident needs of the operator.

This letter is submitted pursuant to 10 CFR 50.54(f) and, as such, an oath of affirmation is enclosed.

Sincerely,



M. P. Alexich
Vice President

MPA/eh

Attachment

cc: D. H. Williams, Jr.
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Charnoff
NFEM Section Chief
A. B. Davis - Region III
NRC Resident Inspector - Bridgman

STATE OF OHIO)
COUNTY OF FRANKLIN)

Milton P. Alexich, being duly sworn, deposes and says that he is the Vice President of licensee Indiana Michigan Power Company, that he has read the forgoing Response to Generic Letter (GL) 89-06 Task Action Plant Item I.D. 2-Safety Parameter Display System (SPDS) Response and knows the contents thereof; and that said contents are true to the best of his knowledge and belief.

M. Alexich

Subscribed and sworn to before me this 1st

day of August, 1989.



Lita D. Hice
NOTARY PUBLIC

Commission expires 6-28-94



ATTACHMENT TO 0773AE

GENERIC LETTER 89-06: TASK ACTION PLANT ITEM I.D. 2-
SAFETY PARAMETER DISPLAY SYSTEM (SPDS) RESPONSE

SPDS CHECKLIST

This checklist is intended to aid licensees in determining the status of their SPDS. Bracketed, [], information refers to the section in NUREG-1342 where discussions on the specific question(s) may be found.

1.0 GENERAL DESCRIPTION

1.1 Plant Name: Donald C. Cook Nuclear Plant

1.2 Who/What organization developed the original version of the SPDS software implemented at your site?

☐ Utility (in-house)

☐ Utility Owner's Group; which? _____

☒ Contractor; which? Westinghouse

☐ Other; who? _____

- 1.3 If the SPDS software has undergone significant modification (i.e., more than 25 percent of software replaced or modified) since original implementation, list the organization performing the modification:

☐ Utility (in-house)

☐ Utility Owner's Group _____

☐ Contractor _____

☐ Other _____

- 1.4 What is the hardware host on which the current SPDS software is implemented?

☐ Westinghouse P250

☒ Westinghouse P2500

☐ Gould/SEL, Model Number _____

☐ Digital (DEC), Model Number _____

☐ IBM, Model Number _____

☐ MODCOMP, Model Number _____

☐ Babcock & Wilcox (Recall)

☐ Honeywell, Model Number _____

☐ Burroughs, Model Number _____

☐ Other: Manufacturer, Model _____



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1.5 How many total CPUs are accessible by SPDS software on the computer system described in the previous question? four (4)

1.6 What is the approximate MIPS rating of all the CPUs counted above?

0.5 MIPS/CPU NOTE: Use a decimal fraction if less than 1.0

If SPDS does not run on a single computer system, provide the following information for the minority parameter set provided by a second computer system. For example, a frequent occurrence of this case is where a separate but adjacent computer terminal provides radiological parameters.

1.7 Manufacturer Eberline/Hewlett Packard (Note 1)

1.8 Model Number CRT-5 /HP - 9000 Model 310

1.9 List parameters provided: Radioactivity Control Parameters
(on the second system) Effluent Monitors
*Plant Unit Vent, Airborne
*Steam Jet Air Ejector Noble Gas
*Gland Seal Condensor Exhaust Noble Gas
Main Steam Relief for Atmosphere
(SG PORV Monitor) Gross Gamma
Steamline Radiation Monitored by
Effluents (see above)
Containment Radiation
Containment Area Radiation
**Containment Airborne

* - includes effluent flow rate

** - isolates on Phase B containment isolation

Note 1. Currently the radiation monitoring function is on the SPDS narrow and wide range ICONIC displays and the Eberline RMS display terminals. It will be removed from the SPDS ICONIC display and only presented on the Eberline RMS displays that are adjacent to the SPDS display terminals.

1.10 Are significant changes in hardware or software planned in the next two years? YES X NO.*

*The following changes are planned in the next two years but we do not expect them to have a significant effect on software or hardware.
If YES, briefly describe planned changes

and list a schedule of major milestones.

1. Install limit switch inputs for containment isolation displays: 1990 refueling outages
2. software for Containment Isolation Status: 1990 refueling outages
3. software changes resulting from Human Factors Review: 1992 refueling outages
4. We intend to remove the Radiation Monitoring Status Displays from ICONICS. The primary Radiation Control Parameters Listed in Section 1.9 are displayed on a Eberline RMS terminal situated adjacent to SPDS ICONIC terminal.

2.0 PARAMETER SELECTION

This section is divided into two parts: the safety functions, and the parameters used to depict each safety function.

2.1 Plant-Specific Safety Functions [III.F.]

List the title of the plant-specific safety function(s) displayed on your SPDS that is (are) equivalent to the safety function in Supplement 1 to NUREG-0737.

Supplement 1 To NUREG-0737
Safety Functions

Plant-Specific Safety Functions

2.1.1. Reactivity Control

Startup Rate Wide Range Iconic
Power Mismatch Narrow Range Iconic

Supplement 1 To NUREG-0737
Safety Functions

Plant-Specific Safety Functions

2.1.2 Core Cooling and Heat Removal

<u>RCS Pressure</u>	<u>Wide Range Iconic</u>
<u>Core Exit Temperature</u>	<u>Wide Range Iconic</u>
<u>SG Level</u>	<u>Wide Range Iconic</u>
<u>RV Level</u>	<u>Wide Range Iconic</u>
<u>PRZR Pressure</u>	<u>Narrow Range Iconic</u>
<u>RCS Tavg</u>	<u>Narrow Range Iconic</u>
<u>SG Level</u>	<u>Narrow Range Iconic</u>

2.1.3. RCS Integrity

<u>PRZR Level</u>	<u>Wide Range Iconic</u>
<u>RV Level</u>	<u>Wide Range Iconic</u>
<u>CNTMT Pressure</u>	<u>Wide Range Iconic</u>
<u>SG Level</u>	<u>Wide Range Iconic</u>
<u>RCS Pressure</u>	<u>Wide Range Iconic</u>
<u>PRZR Level</u>	<u>Narrow Range Iconic</u>
<u>Net Charging Flow</u>	<u>Narrow Range Iconic</u>
<u>CNTMT Monitor</u>	<u>Narrow Range Iconic</u>
<u>SG Level</u>	<u>Narrow Range Iconic</u>
<u>Radiation Monitoring</u>	<u>Presently on Wide &</u>
	<u>Narrow Range Iconic & Eberline</u>
	<u>Proposed on Eberline Only</u>
	<u>RMS terminal</u>

2.1.4. Radioactivity Control

<u>Radiation Monitoring</u>	<u>Presently on Wide &</u>
	<u>Narrow Range Iconic & Eberline</u>
	<u>Proposed on Eberline Only</u>
	<u>RMS terminal</u>

2.1.5. Containment Conditions

<u>CNTMT Pressure</u>	<u>Wide Range Iconic</u>
<u>CNTMT Monitoring</u>	<u>Narrow Range Iconic</u>
<u>Radiation Monitoring</u>	<u>Presently on Wide & Narrow</u>
	<u>Range Iconic & Eberline.</u>
	<u>Proposed on Eberline Only</u>
	<u>RMS terminal</u>

2.2 Parameters Selected to Display Each Safety Function

The purpose of this section is to specify a list of parameters used to depict each of the five safety functions identified in Supplement 1 to NUREG-0737.

Lists of parameters that have been found acceptable to NRC through previous SPDS post-implementation reviews have been provided. One list of parameters applies to pressurized water reactors in general, and the other list applies to boiling water reactors.

NOTE: Check any parameters that have been selected as an SPDS parameter. List any additional parameters under the relevant "Others" category. Include additional safety functions and parameters that are a part of your SPDS.

PRESSURIZED WATER REACTOR SPDS PARAMETER SELECTION CHECKLIST [III.F.1]

Supplement 1 To NUREG-0737

Safety Functions

Parameters

2.2.1 ~~Reactivity Control~~

Wide Range Iconic

Startup Rate

Narrow Range Iconic

Power Mismatch

Neutron Flux

☒ Source Range

☒ Intermediate Range

☒ Power Range

☒ Other: (List) Turbine Impulse Pressure

2.2.2 ~~Reactor Core Cooling and~~

~~Heat Removal from the~~

~~Primary System~~

Wide Range Iconic

RCS Pressure

Core Exit Temperature

Steam Generator Level

Reactor Vessel Level

Narrow Range Iconic

Pressurizer Pressure

RCS Tavg

Steam Generator Level

☒ RCS Level

☒ Subcooling Margin

☐ Hot Leg Temperature

☐ Cold Leg Temperature

☒ Core Exit Thermocouples

☒ Steam Generator Level

NARROW & WIDE

☐ Steam Generator Pressure

☐ RHR Flow

☒ Other: (List) PRZR Pressure

RCS Tavg

RCS Pressure

Supplement 1 To NUREG-0737

Safety Functions

Parameters

~~2.2.3 RCS Integrity~~

Wide Range Iconic

Pressurizer Level
Reactor Vessel Level
RCS Pressure
Containment Pressure
Steam Generator Level

☒ RCS Pressure
☐ Cold Leg Temperature
☒ Containment Sump Level
☒ Steam Generator (Level)

☒ Other: (List) PRZR Level Wide & Narrow Range

Narrow Range Iconic

Pressurizer Level
Net Charging Flow
Containment Monitor
Steam Generator Level
Radiation Monitoring

Net Charging Flow

a. RCP 1 seal return flow
b. RCP 2 seal return flow
c. RCP 3 seal return flow
d. RCP 4 seal return flow
e. Letdown flow

Radiation Monitoring

(See Answer to Question 1.9)

CNTMT Temperature maximum

CNTMT Pressure

RV Level

~~2.2.4 Radioactivity Control~~***

Radioactivity Control Parameters

Effluent Monitors

*Plant Unit Vent, Airborne
*Steam Jet Air Ejector Noble Gas
*Gland Seal Condensor Exhaust
Noble Gas
Main Steam Relief for Atmosphere
(SG PORV Monitor) Gross Gamma
Steamline Radiation Monitored by
Effluents (see above)

☒ Stack Monitor (s)
☐ Steamline Radiation (s)
☒ Containment Radiation
☐ Other: (List) _____

Containment Radiation

Containment Area Radiation

**Containment Airborne

- * - includes effluent flow rate
- ** - isolates on Phase B containment isolation
- *** - On Eberline RMS terminal

Supplement 1 To NUREG-0737

Safety Functions

Parameters

2.2.5 ~~Containment Conditions~~

Wide Range Iconic

Containment Pressure

Narrow Range Iconic

Containment Monitoring

Both Wide & Narrow Range Iconic

Radiation Monitoring (Proposed for Removal)

*planned to be added by end of
1990 refueling outages

**on Eberline terminal, parameters
given in 2.2.4 & 1.9

☒ Containment Pressure

☒ Containment Isolation *

☐ Containment Hydrogen Concentration

☒ Other: (List) CNTMT Sump Level inputs

CNTMT temperature inputs

**Radiation Monitoring inputs

2.2.6 Other Safety Functions

☐ Yes ☒ No

If yes, list functions and parameters.

BOILING WATER REACTOR SPDS PARAMETER SELECTION CHECKLIST [III.F.2]

Supplement 1 To NUREG-0737

Safety Functions

Parameters

2.2.6 Reactivity Control

☐ APRM
☐ SRM
☐ Other: (List) _____

2.2.7 Reactor Core Cooling and Removal

☐ RPV Water Level
☐ Drywell Temperature
☐ Other: (List) _____

2.2.8 Pressure Vessel Integrity

☐ RPV Pressure
☐ Other: (List) _____

2.2.9 Radioactivity Control

☐ Main Stack or Offgas (Pretreatment) Monitor
☐ Containment Radiation Monitor
☐ Other: (List) _____

2.2.10 Containment Integrity

☐ Drywell Pressure
☐ Drywell Temperature
☐ Suppression Pool Temperature
☐ Suppression Pool Level
☐ Containment Isolation Valve Status
☐ Drywell Hydrogen Concentration
☐ Drywell Oxygen Concentration
☐ Other: (List) _____

2.2.11 Other Safety Functions

Yes No

If yes, list functions and parameters.

2.3 Detailed Parameter Questions [III.F.1.e and III.F.2.e]

2.3.1 Are containment isolation demand signals input to SPDS (e.g., PWR - Phase A/B Isolation Demand Signal or BWR - Group Isolation Demand Signals)?

YES* ☒ NO

*Not provided on ICONIC DISPLAYS. Will be displayed on adjacent TSC computer display terminal.

2.3.2 Does the SPDS use actual containment isolation valve position as an input to monitor successful isolation? YES* ☒ NO

*Actual valve position inputs will be used to display containment isolation on adjacent TSC computer display terminal.

3.0 DISPLAY OF SAFETY FUNCTIONS [III.F.]

3.1 Does the SPDS provide the status of all five safety functions on one display page? ☒ YES* NO

*Containment Condition does not include containment isolation status parameter.

3.2 Are the individual parameters that support the safety functions grouped by safety function? YES ☒ NO

3.3 Is the status of all five safety functions always displayed on the SPDS? [III.B.2] YES ☒ NO

4.0 RELIABLE DISPLAY [III.A.3 except as noted]

4.1 Is the SPDS hosted on the same computer system as the plant process computer? YES ☒ NO

If NO, does the SPDS computer receive some of the computer point inputs from the process computer? YES ☒ NO

- 4.2 List location of accessible (e.g., keyboards) devices capable of changing SPDS data. [III.A.3.a]

4 CRTS in the control room

- 4.3 Are SPDS hardware availability data documented? ☒ YES ☐ NO

IF YES, what is the documented percent availability of the SPDS hardware over the past 12 months? NOTE: Availability should be based on power operation, startup, hot standby, and hot shutdown only and not include other plant modes.

U-1 99.2% 6/1/88 to 5/31/89

% Available

U-2 99.4% 6/1/88 to 5/31/89

- 4.4 Are the SPDS computer points included in routine instrument loop surveillances? [III.A.3.a] ☐ YES ☒ NO.

- 4.5 What percentage of software verification and validation has been completed?

☒ 100%

☐ Approximately half

☐ Planned in the future

☐ Other, describe _____

- 4.6 Have changes to the SPDS host computer and software been maintained under a formal Software/Hardware Change Request (or equivalent) system? Check all that apply below:

☒ Yes; For how long? 3½ years

☐ No

☐ Have plans to in the future

4.7 How frequently does the SPDS display invalid or erroneous information?
[III.A.3.a]

- ☐ frequent (above 5 percent)
☐ infrequent (1-5 percent)
☒ rare (less than 1 percent of the time)

4.8 How frequently have any of the critical safety functions been in a false alarm condition? [III.A.3.a]

- ☐ frequent (above 5 percent)
☐ infrequent (1-5 percent)
☒ rare (less than 1 percent of the time)*

*Not including Westinghouse Radiation Monitoring inputs. It is proposed they be replaced by the Eberline RMS terminal.

4.9 Does the SPDS display valid parameter information during adverse containment conditions? ☒ YES ☐ NO

Re: Eckenrode 6/8/89 - "The SPDS Containment information must be at least as good (reliable) as the primary instrumentation system."

5.0 HUMAN FACTORS [III.E except as noted]

Human factors in the context of SPDS design includes the usefulness of the technical information displayed on the screen to users and their performance during emergency operations. Human factors also includes display design techniques, such as labeling, display layout, and control/display integration.

This section provides a sample of the kinds of questions to be asked to help determine the degree to which the SPDS design incorporates accepted human factors principles.

5.1 Who is the prime user of the SPDS?
[III.B.1]

- ☒ Shift Supervisor.
☒ Shift Technical Advisor
☒ Board Operators/Unit Supervisor
☒ Other (specify) TSC personnel

5.2 Are all SPDS controls located at the SPDS workstation? ☒ YES ☐ NO
[III.B.1]

If NO, where are the controls located? _____

5.3 Is all SPDS-related information physically displayed such that the information can clearly be read from the SPDS user's typical position? [III.A.1 and III.B.1]

☒ YES ☐ NO

*Except for Containment Isolation

If NO, what specific information is available at other locations?

5.4 How are SPDS displays accessed? [III.A.2]

☐ Continuous display, no interaction possible.

☒ Keyboard, one or two keystroke function key.

☒ Keyboard, greater than 2 keystrokes.

☐ Touchscreen.

☒ Cursor/menu (mouse, joystick, up/down key).

5.5 Does the SPDS consistently respond to user commands in less than 10 seconds? [III.A.2]

☒ YES ☐ NO

If NO, is feedback provided to the user regarding delays in response?

☐ YES ☐ NO

5.6 Does the SPDS sampling rate for parameters match the display update rate for those parameters? [III.A.2]

☒ YES ☐ NO* Except for RMS

Proposed Eberline RMS display updates every 10-15 second for each displayed channel. Parameter value updates occur as function of count rate.

If NO, what specific parameters do not match?

Eberline RMS parameters

5.7 Are all parameter units of measure displayed on the SPDS consistent with the units of measure included in the emergency operating procedures?

x YES ___ NO

5.8 Are all parameter labels and abbreviations consistent with the labels and abbreviations included in the emergency operating procedures?

___ YES x NO

5.9 Is any of the displayed information in a form that requires transformation or calculation?

___ YES x NO

IF YES, what types of transformations or calculations are necessary?

5.10 Are the high-and low-level setpoints consistent with hard-wired parameter instrumentation and reactor protection system setpoints?

___ YES x NO

5.11 Does SPDS display high-and low-level setpoints?

___ YES x NO

5.12 Are the SPDS calculated values such as subcooling margin, consistent with calculated values on the plant process computer?

___ YES x NO

5.13 Are all parameter units of measure displayed on SPDS consistent with the hard wired instrumentation?

☒ YES ☐ NO

5.14 Are all parameter labels and abbreviations consistent with hard-wired instrument labels and abbreviations?

☒ YES ☐ NO

5.15 Were the technical basis for software specifications verified with plant-specific data (for example, heat-up and cool-down limits, variable steam generator setpoints and high and low level alarm setpoints)?

☐ YES ☒ NO (heat-up and cool-down limits - not applicable to SPDS Iconic)

5.16 List LERs written as a result of SPDS software problems.

None

6.0 TRAINING [III.C.2 all questions]

6.1 Does simulator training include training in the use of the SPDS?

☐ YES ☒ NO

6.2 How long is formal classroom training for SPDS users?

☐ No formal classroom training

☒ Less than 2 hours

☐ 2-4 hours

☐ More than 4 hours

6.3 Is there periodic requalification training for SPDS? ☐ YES ☒ NO

If YES, how often? _____

6.4 When are SPDS users given training regarding the relationship of the parameters to the plant safety functions? Check all that apply below:

<u> </u>	Not trained
<u> X </u>	On the job or required reading
<u> X </u>	During requalification training
<u> X </u>	During an initial SPDS training program

7.0 ELECTRICAL ISOLATION [III.C.1 all questions]

7.1 What isolation devices are currently used?

ANALOG - FOXBORO Model M-66D-CO, M-66G - OW, Scientific Columbus type P;
DIGITAL - GE-HGA, HFA, HEA, NGV, Westinghouse AR & ARD, C. P. Claire
type J, Cutler Hammer type M-600, Struthers-Dunn type 214XCX48P
ADDITIONAL ANALOG: VICTOREEN 879-1

7.2 Are these devices the same ones that were originally installed and approved by NRC? X YES* NO

*Victoreen isolator used to supply hi range containment area radiation data from class IE Monitor to both the Eberline System and the TSC.

This isolator installed for 0737/RG 1.97 not original protection system equipment.