NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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August 14, 1984

Docket No. 50-336
A04089

Director of Nuclear Reactor Regulation
Attn: Mr. James R. Miller
Operating Reactors Branch #3
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

References: (1) W. G. Counsil letter to D. G. Eisenhut, Response to Generic Letter 82-28, dated March 11, 1983.

(2) J. R. Miller (NRC) letter to W. G. Counsil, Evaluation of Proposed Inadequate Core Cooling Instrumentation Systems for Millstone Unit No. 2, dated July 9, 1984.

(3) W. G. Counsil letter to D. M. Crutchfield/J. R. Miller, dated April 9, 1984.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 2
Additional Information for Generic Letter 82-28

In Reference (1), Northeast Nuclear Energy Company (NNECO) docketed information on its proposed inadequate core cooling (ICC) instrumentation in response to the Staff's request in the subject Generic Letter. In Reference (2), the Staff requested additional information on ICC instrumentation. As requested by Reference (2), the attached information is provided.

In addition, NNECO has reviewed Enclosure 1 of Reference (2) and wishes to present the following comments:

1) Subcooled Margin Monitor (SMM)

Reference (1) described the existing subcooled margin monitor. The ICC system as described in Appendices A & B of this letter describes the proposed modified system.

Please note that the appropriate RTD range per Regulatory Guide 1.97 is 50°F - 750°F. Enclosure (1) erroneously states that the "required" range is up to 1800°F. NNECO is unaware of any such "requirement" for RTDs.

In Reference (3), NNECO informed the Staff that the SMM would be qualified pursuant to 10CFR50.49.

A002
1/40

2) Core Exit Thermocouples (CETs)

NNECO concurs with the Staff's review of the submittal. However, please note that we informed the NRC Staff in Reference (3) that the CETs would be qualified pursuant to 10CFR50.49.

Further information is presented in the attachment to this letter.

3) Heated Junction Thermocouples (HJTCs)

NNECO has completed the response to the questions presented in Enclosures 2 and 3 of Reference (2) and it is attached.

Please be advised that the HJTC cable at Millstone Unit No. 2 has not yet been installed. NNECO never indicated that the installation was made at Millstone Unit No. 2.

The attached response refers to the Safety Parameter Display System (SPDS) as primary means of displaying ICC parameters, however, SPDS will not be functional at the end of the 1985 refueling outage. NNECO will provide temporary display capability by using an independent and isolated CRT until the SPDS is fully operational. This temporary display will provide information for all CETs, core map, saturation/superheat in °F/Psat, and HJTCs.

Trend capability showing the temperature/time history will be made available when the SPDS is functional.

There are no deviations from CET criteria described in NUREG-0737 Item II.F.2 Attachment 1, and Appendix B.

This information is intended to fully resolve the Staff's concerns regarding this item. If there are any questions, please contact my staff.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

W. G. Counsil

W. G. Counsil
Senior Vice President

ATTACHMENT 1

REQUEST FOR ADDITIONAL INFORMATION

ON NRC LETTER 82-28

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APPENDIX A

ICC SYSTEM DESCRIPTION

The ICC Monitoring System integrates the processing and display of:

1. Subcooled/Superheat (SC/SH) Monitor
2. Core exit Thermocouples (CETs)
3. Combustion Engineering - Heated Junction Thermocouple (HJTC) System for inventory tracking.

The information provided by this system allows the plant operators to monitor the reactor status during abnormal plant conditions. The operator uses this information to take corrective action as needed and/or confirm that actions taken produce the desired result. Thus, the approach to, existence of, and recovery from inadequate core cooling conditions can be monitored consistent with the provisions of NUREG-0737, Section II.F.2. The Millstone Unit No. 2 ICC System is designed as Category 1 (Class 1E) with redundant trains (train A and train B). Each train contains stand alone processing electronics and displays, which monitors, alarms, and trends ICC, as shown in Figure A.

Subcooled/Superheat monitors use RCS temperatures and pressures to calculate the degree of Subcooling or Superheat in the reactor coolant either in terms of temperature or pressure. The calculation is based upon the most conservative input temperature and pressures.

Core exit thermocouples are provided with required cold junction temperature compensation. All core exit temperatures are displayed on a digital panel meter, selectable from a switch panel.

The Heated Junction Thermocouple System monitors coolant inventory in the region above the core. Redundant strings of heated junction thermocouples are arranged in the reactor vessel head area to provide indication of conditions at eight distinct levels. The system is a two-channel system each consisting of a string of eight sensors.

Each ICC cabinet (train A & B) has a qualified class 1E display system that includes the following ICC information:

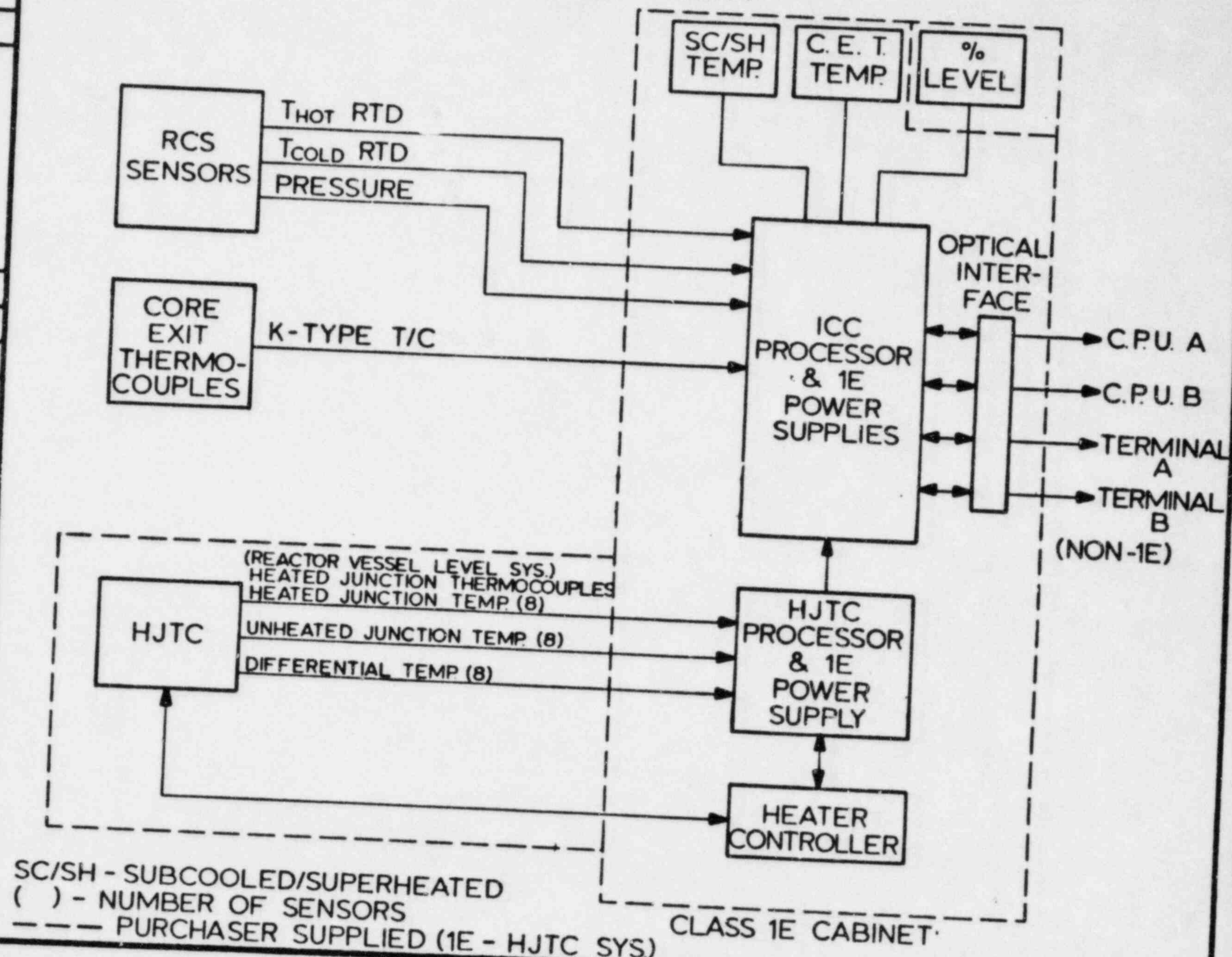
1. Subcooled/Superheat in $^{\circ}F$ ($300^{\circ}F$ Subcooling to $45^{\circ}F$ Superheat).
2. Core exit temperatures ($200^{\circ}F$ to $2300^{\circ}F$).
3. % Level in the vessel above the core.

The primary means of displaying the ICC information is provided via the Safety Parameter Display System (SPDS). SPDS will receive the ICC transmitted data with optical isolation provided by ICC. SPDS will display Subcooling/Superheat based on primary coolant temperatures, T_{hot}, T_{cold}, CET, unheated junction temperatures of HJTC, and RCS pressure.

Alarms are provided on Main Control Boards from the ICC Cabinets. There are three alarms, saturation/superheat trouble alarm, CET high alarm, and vessel % level alarm.

FIGURE A

ICC FUNCTIONAL BLOCK DIAGRAM - TRAIN A
TRAIN B - SIMILAR



NORTHEAST UTILITIES SERVICE CO.
FOR CONN. YANKEE - MILLSTONE 2
TITLE ICC FUNCTIONAL BLOCK DIAGRAM - TRAIN A TRAIN B - SIMILAR
BY A. W. M. DATE 5-31-83
CHKD DATE 6-31-83
DWG NO SCK-MSE-80-109-3

REVISIONS

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APPENDIX B

ICC SYSTEM SOFTWARE

The objective of the inadequate core cooling monitor is to provide the reactor plant operator with a simple indication of core cooling conditions. This objective is achieved by monitoring a number of reactor system measurements, performing certain calculations using these measurements in a digital computer, and providing the operator with the results of these calculations in real time. This section outlines a structured, modular computer program for performing the required calculations.

Input Variables

The measured quantities used as input variables for the inadequate core cooling monitor are RCS pressure, RCS Temperature, CET's and HJTC.

Calculations

A number of different calculations are performed, using the input variables, to generate output information for the operator's use. These calculations are itemized below:

1. All input values are converted to engineering units; ^{o}F for temperatures and PSIA for pressures.

2. All engineering unit values are checked for "reasonableness" before being used in any further calculations. Precise "reasonableness" limits will be defined and verified by careful analysis during the program.

3. The limiting values module will search through the validated signals for the lowest pressure, the highest CET, and the CET selected for the panel display. (An automatic mode to select the highest will be available.)

4. The saturation margin module uses the lowest pressure to find the saturation temperature, the highest temperature to find one saturation pressure, and the selected temperature to find the second saturation pressure. Four margins will be calculated: a pressure and temperature margin for the highest temperature and a pressure and temperature margin for the selected temperature. Adapted versions of the subroutines built by McClintock and Silverstri for the ASME steam table will be used for saturation calculations.

5. The data for the panel displays will be formatted. These data will include the selected temperature, its temperature margin to saturation, and an input error indicator.

System Operation

The inadequate core cooling monitor, once the initial startup is accomplished, will be self-sustaining. All program operations, from input through calculations to output, including periodic testing, will be performed sequentially. The program

will cycle asynchronously at a rate determined by the time required to perform the necessary operations. Analog points may also be deleted from the scan using panel switches.

System Diagnosis

A system performance test will be executed periodically to detect software or hardware failures. The test will insert, through software, a set of standard input values, momentarily replacing the actual A/D converter outputs. After one pass through the program, all computed output values will be compared with expected output values for those standard inputs and any deviation reported as a system error. If a system error occurs, all intermediate computational results will be saved to assist the operator in isolating the source of the error.

System and Handler Software

Intel 8086-based software will perform the necessary ICC functions of data validation and conversion, selection of limiting pressures and temperatures, calculation of temperature and pressure margins, maintaining tabular and formatted data files, maintaining tabular and formatted system status files, and controlling the communication through the serial parts.

System software will be based on the iRMX 86 operating system. Applications programming will use the iRMX 86 languages and utilities. The high-level language will be iRMX 86 FORTRAN. Utilities will include iRMX 86 EDIT, iRMX 86 LIB, and iRMX 86 LINK/LOCATE. The iRMX 86 MACRO ASSEMBLER will be available for providing any special interface routines not practicable in the FORTRAN language.

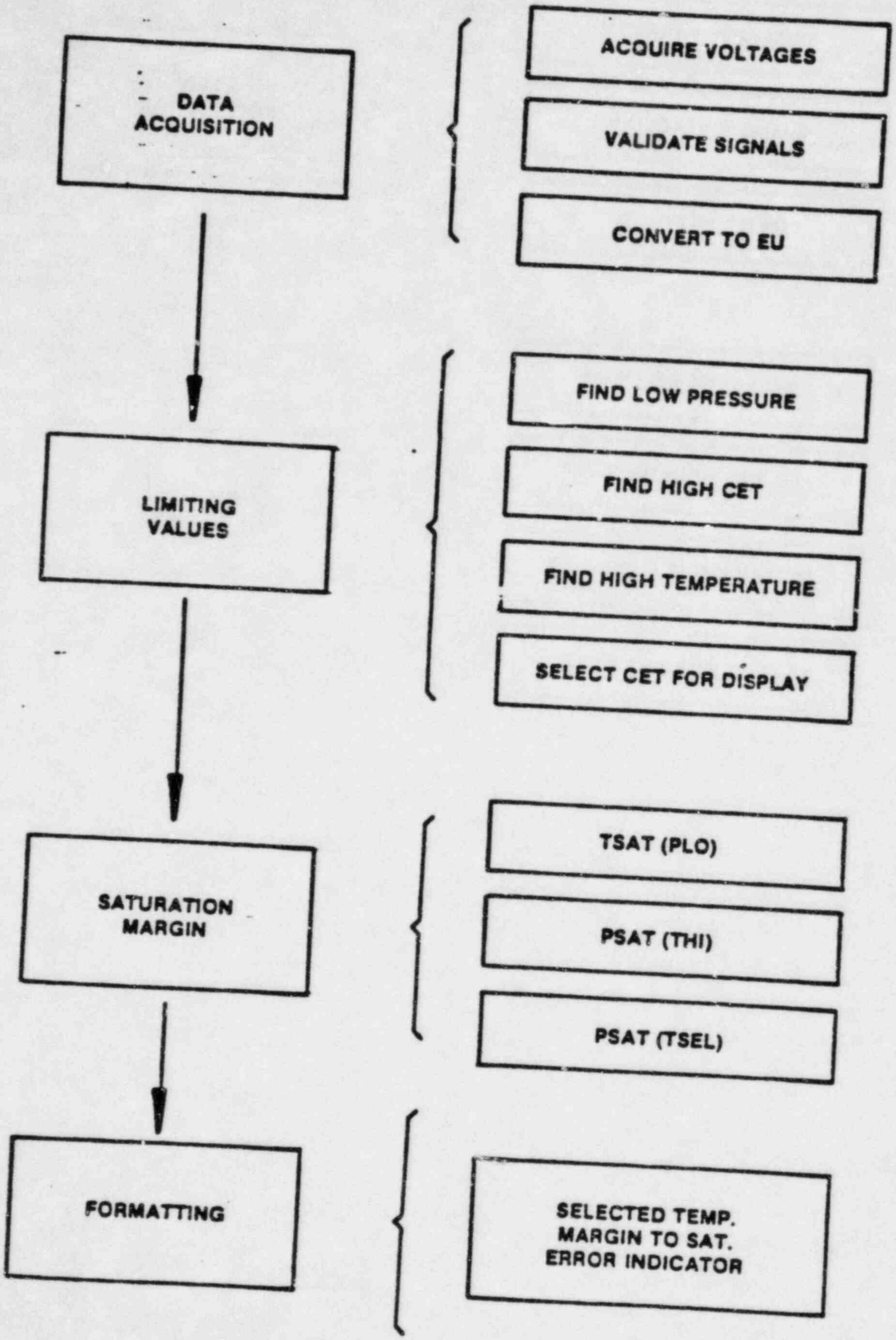
The Intel iRMX 86 operating system is a comprehensive multiprogramming system for a microcomputer based on an 8086 microprocessor. It is based on real-time, and provides a foundation for the process calculations and data communications needed for the ICC application.

The applications program will have two major divisions: one handling process calculations and other handling on-demand communications.

Process Calculations

The process calculations will be broken down into several smaller modules: data acquisition, limiting values, saturation margin, and formatting. These in turn will be split into small modules. The process calculation is shown as a block diagram in Figure 1.

FIGURE 1. PROCESS CALCULATION



Communications

The on-demand communications module will answer the requests from the four serial ports. The module will be broken into six parts consisting of a command interpreter, four different data transmission modules, and an error handling module. The on-demand communications module is shown as a block diagram in Figure 2.

Data Acquisition

The data acquisition module will provide the data validation process. The data will be checked for switched-out, open, shorted, or out-of-range conditions. A different error code will be stored in an array for each input depending upon the error. The data will then be converted to engineering units according to standard temperature (or pressure) conversion curves.

Command Interpreter

The command interpreter will receive a transmitted command and test for proper syntax. For improper syntax, an error flag will be transmitted and if formatted output was requested, a menu of valid requests will also be transmitted. For proper requests, the module will branch to the appropriate data transmission module.

Four data transmission modules will be supplied. Each will transmit tabular or formatted data as directed by an input flag. The four modules are:

1. ICC: transmit coolant level, CET summary, subcooling margin;

2. CET: transmit an individual CET or all CET's;

3. HJTC: transmit a single HJTC pair or all of them; and

4. SYS: transmit the status of the system and all inputs.

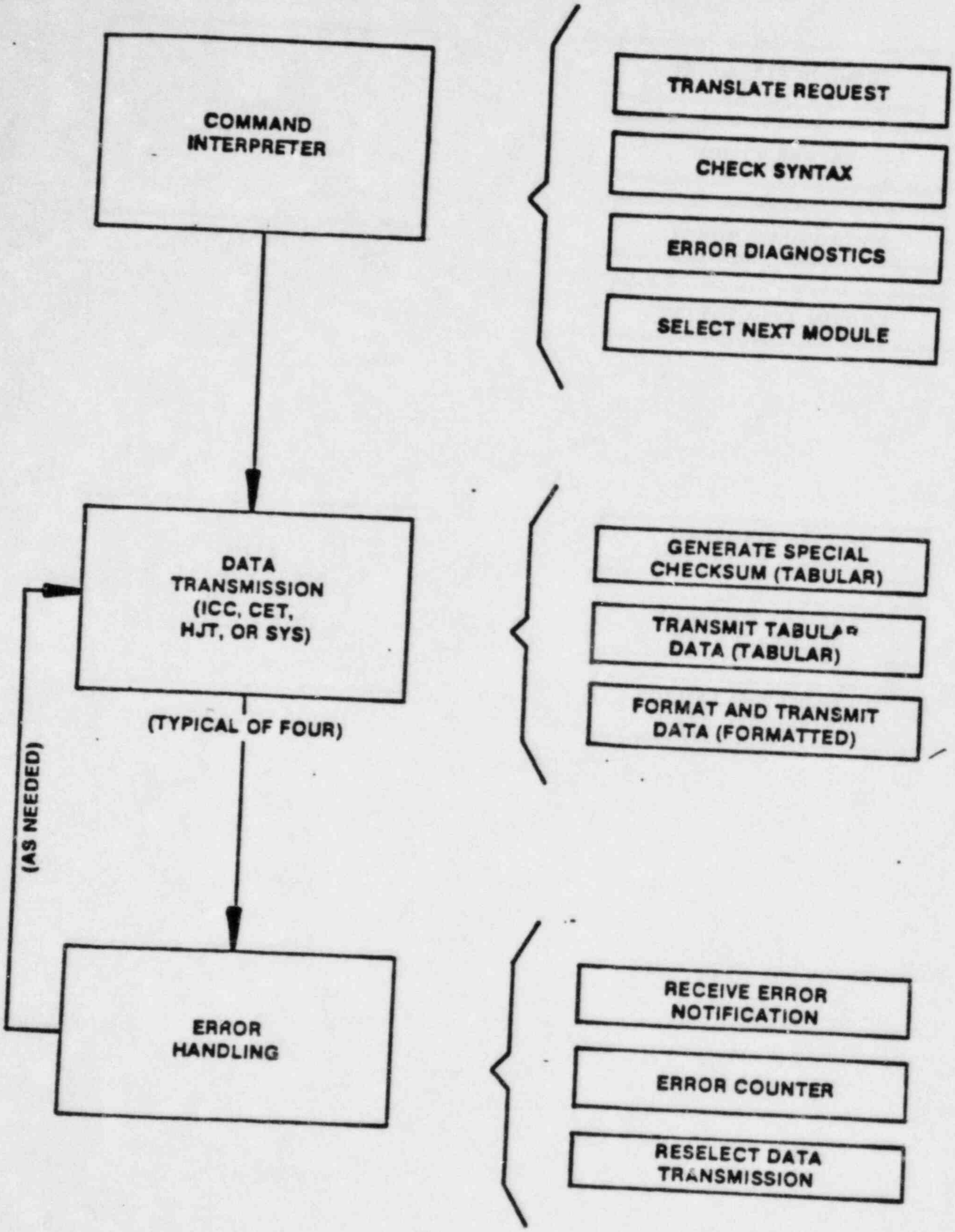
Although four modules will be supplied to satisfy the requirements, the program structure is designed to make adding more modules relatively easy.

The final module in the on-demand communications module handles error correction. Any transmission of data contains parity checking. If the receiver detects a transmission error, the data transmission module will be reentered for another try. After a yet to be specified number of unsuccessful tries, the on-demand communications module will be disconnected.

RVLS

RVLS/HJTC Signal Processor converts the heated junction thermocouple signals into Heater Controller and Operator Interface outputs.

FIGURE 2. ON-DEMAND COMMUNICATIONS



The Heated Junction Thermocouple System (HJTCS) receives sixteen thermocouple inputs; eight heated junction inputs (T_H) and eight unheated (T_U) junction inputs. These signals are transmitted to the HJTCS cabinet from the probe assembly type K thermocouples. At the cabinet the field wires are brought to type K terminal blocks and the type K thermocouple wire is continued as far as the signal conditioning panel mounted on the back of the microprocessor chassis. The signal conditioning panel contains the open thermocouple detection circuitry and the cold reference junction compensation circuitry. Cold junction is accomplished by measuring the barrier temperature utilizing a semiconductor temperature sensor. The temperature sensor circuit produces an output voltage, that is equivalent to the temperature of the barrier strip. To arrive at a compensated output this voltage is added to the measured value of the thermocouple channel. These input data values are converted to digital values by an A/D converter. These digital values are transmitted to an input buffer.

Isolation of the thermocouple input is provided by use of a 'flying-capacitor' approach. This approach reduces the need for expensive or bulky components (i.e. opto isolators or transformers) yet maintains a high common mode rejection ratio. The 'flying capacitor' consists of a capacitor with reed relays to connect either to the thermocouple or to the Analog to Digital conversion circuitry. Normally the reed relay connects the capacitor to the thermocouple input. When the A/D is asked to read the input (inputs read sequentially) reed relays are used to open the connection to the thermocouple signal and to close the connection to the A/D conversion circuitry; thus providing isolation from the input signal.

Data are read from the input buffer and converted to millivolts. This millivolt value is then compensated for thermocouple lead length due to the open thermocouple circuitry. The compensated millivolt value is then converted to an equivalent temperature reading in degrees Fahrenheit (F). Temperature conversion is accomplished by table lookup. Block data exists which has millivolt reading in 5°F steps from 35°F to 2300°F. Linear interpolation is used to find values which fall in between the 5°F steps. (ΔT) is calculated from (T_H) minus (Tu), and is compared against a low setpoint (25°F) and the corresponding error number is set if (ΔT) is less than the setpoint. A low (ΔT) error number indicates that there is a loss of heater power or a heater controller malfunction.

(ΔT) or (Tu) is used to determine % level for both the Head Area and the Plenum Area, as each heated junction thermocouple becomes uncovered. A low-level alarm is generated whenever (ΔT) or (Tu) is greater than 200°F or 700°F respectively. Five degree (5°F) dead bands exist in both the (ΔT) and (Tu) setpoints for uncovered sensor to prevent cycling.

The maximum of the top three (Tu) sensors is selected for the (Tu) value. If all of the top three sensors are removed the (Tu) value will go to zero and the corresponding error number is set.

A maximum (T_H) and a maximum (ΔT) are selected and are used to calculate separate setpoint signals for the heater controllers. The minimum of the two (2) heater controller setpoints signals is selected and sent to each of the heater controllers. The (T_H) and (Tu) heater controller setpoint signals (as shown in Figure 3) are reduced at a constant rate, as their respective (T_H) and (ΔT) values increase above a predetermined value, until it equals zero at the second predetermined setpoint.

The engineering units for the Reactor Vessel Level and the two Heater Controller Setpoint Signals are converted to digital format for output to the D/A converter.

A Watchdog Timer Subroutine Program is reset after every program loop. If not reset, the timer will alarm 20 seconds after it times out indicating that the processor has stopped running.

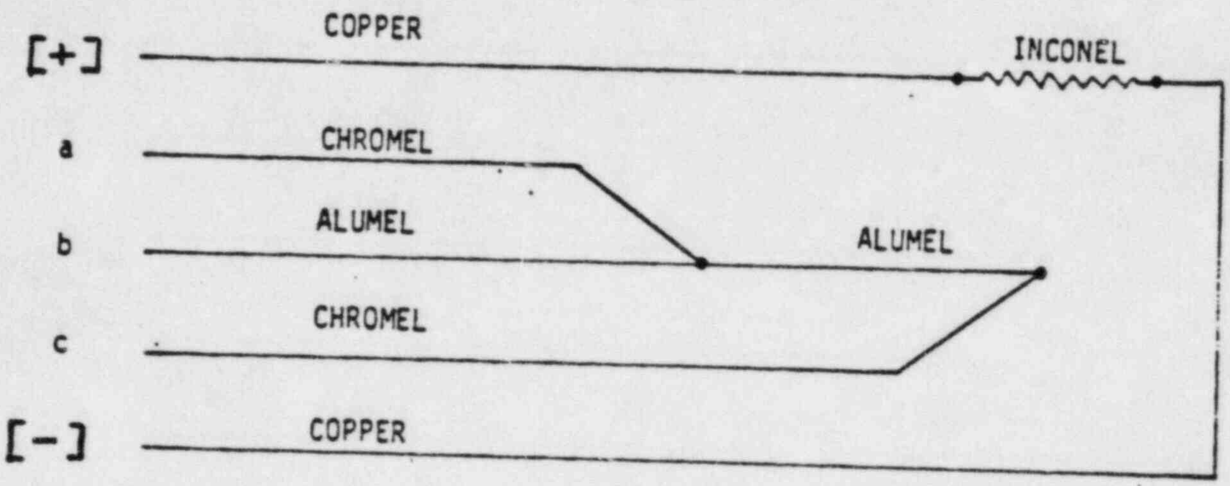
A check Sum Subroutine (cyclical redundancy check - CRC) continually checks all Prom Memory for any single bit change by exclusively "oring" all Prom Memory and setting the corresponding error number if the CRC checked sum is not zero. All RAM is continuously checked by temperorily changing the data and reading the new value. If the data read agrees with the data sent then the original data is replaced. If the data read does not agree with the data sent the corresponding error number is set.

Alarms and errors are brought to the attention of the operator by flashing the Module Digital Indicator. The operator can stop the flashing by pushing the ACK switch. The ACK switch light will stay "on" until all errors and alarm conditions are cleared. Any new error or alarm will start the Module Indicator flashing again until acknowledged by the operator.

The RESET Pushbutton on the Module restarts and initializes the HJTC software program and clears all ram.

Inputs, output and calculated values are sent to the Module for operator interface and indication.

FIGURE 3
ELECTRICAL DIAGRAM OF HJTC



$V(a-b) = V_{TR}$ = ABSOLUTE TEMPERATURE, UNHEATED JUNCTION (T_u)

$V(c-b) = V_{TH}$ = ABSOLUTE TEMPERATURE, HEATED JUNCTION (T_H)

$V_{TH} - V_{TR}$ = DIFFERENTIAL TEMPERATURE (ΔT)

NRC QUESTION (1)

In view of the installation of only one SMM, provide more detail of the back-up instrumentation to justify the single failure criteria. Provide the scope of its upgrading and describe how it meets the requirements of Item II.F.2 of NUREG-0737 including the display range.

Response

Before supplying a detailed response to the evaluation criteria of Appendix B of NUREG 0737 item II.F.2, NNECO wishes to state that the SMM system is being modified to provide two redundant trains.

Appendix B (of NUREG-0737, II.F.2)

DESIGN AND QUALIFICATION CRITERIA FOR ACCIDENT MONITORING INSTRUMENTATION

1. Environmental Qualification

Response:

ICC Instrumentation Qualification

1. Heated Junction Thermocouple System HJTC/RVLS

   Qualification for out of Reactor Vessel Components has been reviewed and accepted by NNECO. All required documentation is on file for Staff review. Qualification for the invessel portion of the probe is being reviewed by NNECO. Upon completion, documentation will be available for Staff review.

2. SC/SH and CET processing and display system cabinets are located in a mild environment. Qualification is presently being performed to meet the requirements of IEEE 323 and 344. Upon completion, documentation will be available for Staff audit.

3. Core Exit Thermocouples

   See response to item 7 of Question (2) of this response.

2. Single-Failure Analysis

Response:

The ICC Processing and Display Cabinet utilizes two electrically and physically independent channels. Each channel consists of one HJTC probe assembly (eight sensors), 2 RCS Pressure, 2 RCS Temperature, and 23 CET's, three signal processing units, two heater power supplies, three operator display, cabling and connectors. The two channels are identical including sensor locations. The two independent displays will continuously display percentage of reactor vessel level above the fuel alignment plate, SC/SH and CET temperatures.

Power supply failures capable of causing an erroneous or ambiguous indication will be automatically detected and a fault signal provided to the operator. Any failure which causes an error in level indication will result in a difference in the level indications on the two operator displays. The operator will then be able to obtain individual thermocouple junction temperatures for operability checking and diagnostic purposes upon manual command at the operator module. This will enable the operator to determine which channel is operating correctly.

3. Class 1E Power Source

Response:

Millstone Unit No. 2 ICC System is designed as Category 1 (Class 1E) with independent and redundant trains. (train A and train B). Each train contains stand alone processing electronics and Class 1E backup displays, which monitors and alarms ICC. Each train is powered from a separate Class 1E vital bus.

1E to non-1E interfaces are provided by utilizing optical isolators.

The primary ICC display is part of SPDS. SPDS is non IE system with its power supplied from uninterrupted power sources.

4. Availability Prior to Accident

Response:

Because the system is computer based, it has the capability to perform operability self testing. The on-line sensor testing for operability and criteria is described in Appendix B. Failed tests will result in a fault indication at the operator display.

In addition to redundant channels and operator system checks, operational availability is further enhanced by the on-line tests as described above.

5. Quality Assurance

Response:

The entire ICC system from sensors through processing and display systems is engineered, designed, and constructed as a QA Category I system in accordance with the requirements of 10CFR50 Appendix B. The plant process computer (SPDS), which is not a QA Category I device, provides the primary indication of ICC conditions to the operator. In the event of a failure of the plant process computer all ICC information will be available on the ICC cabinets which are QA Category I.

6. Continuous Indication

Response:

Refer to Appendix A.

7. Recording of Instrument Outputs

Response:

The SPDS/plant computer will periodically read the contents of both ICC trains. This ICC information will be stored on the SPDS historical file which can be accessed upon operator command. The historical file will permit outputs in printed format or trend format for up to two hours pre-event and twelve hours post-event.

8. Identification of Instruments

<u>Response:</u>

Millstone Unit No. 2/ICC Cabinets

Train A - ICC Train A

Train B - ICC Train B

9. Isolation

Response:

Refer to the response to item 3 of the above Question (1) of this response.

NRC QUESTION (2)

Provide confirmation that there are no deviations of the HJTC from the CE generic design addressed in NUREG/CR-2627.

Response

There are no deviations.

However, C-E tests the HJTC probe assembly to 1800°F. This temperature was established as a conservative upper limit of the expected temperature that the HJTC probe would be exposed to for cladding temperatures up to 2300°F. The 2300°F referred to in Section 3-a on Page 41 of Report CR-2627 refers to the fuel cladding temperature condition that could exist, not the sensor temperature.

NRC QUESTION (3)

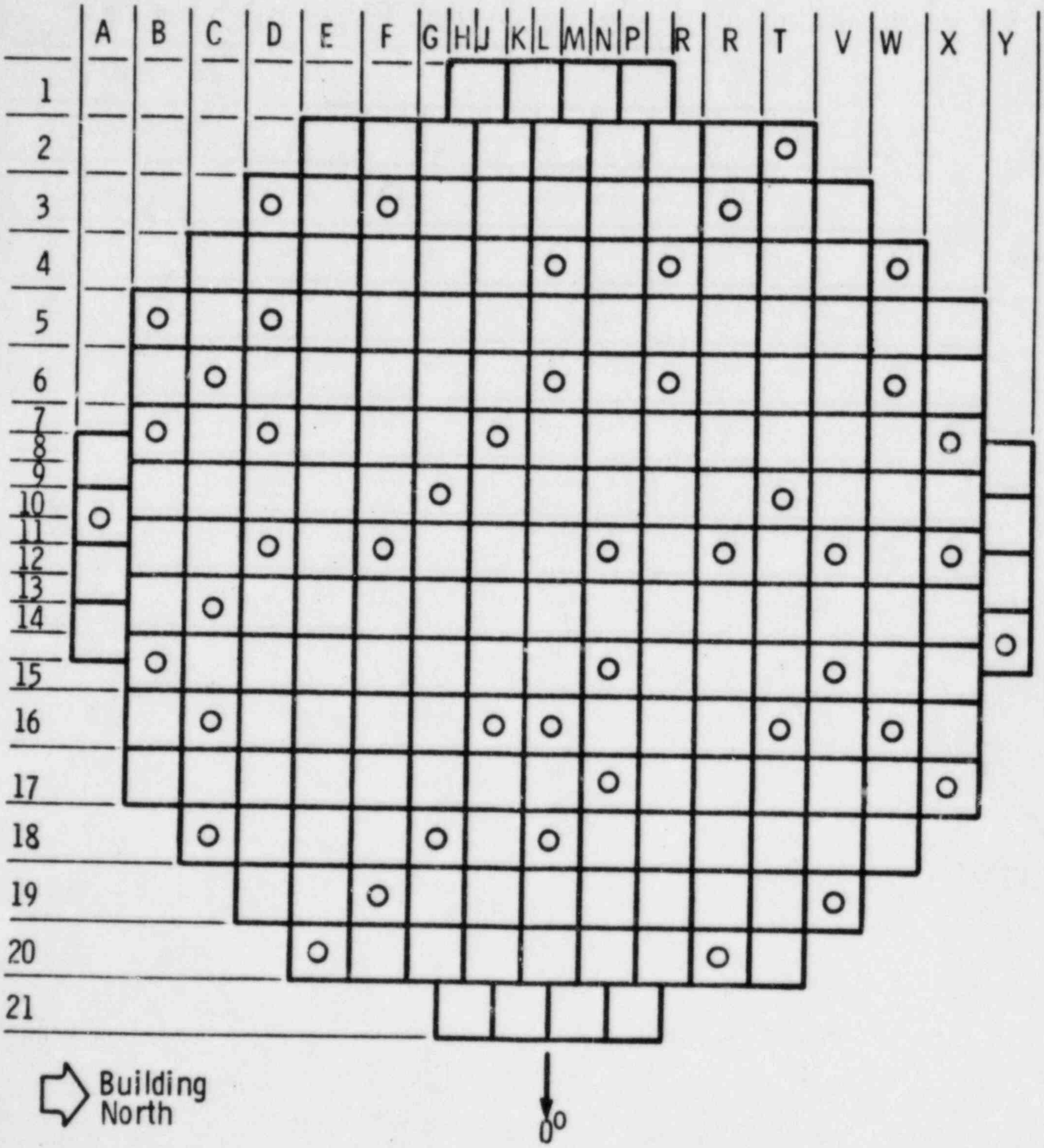
Provide the scope of the CET upgrade and discuss how they will meet the requirements of Item II.F.2 of NUREG-0737.

**II.F.2 Attachment 1 (for Core Exit Thermocouples)

1. Provide diagram of core exit thermocouple locations or reference the generic description if appropriate.

   Response

   Refer to Figure 4 (Attached)



Millstone Nuclear Power Station Unit No. 2	In-Core Detector Locations JUN 1 0 1982	Figure 4

2. Provide a description of the primary operator display including:

   a. A diagram of the display panel layout for the core map and description of how it is implemented, e.g., hardware or CRT display.

   b. Provide the range of the readouts.

   c. Describe the alarm system.

   d. Describe how the ICC instrumentation readouts are arranged with respect to each other.

<u>Response</u>

The primary means of displaying ICC information is provided via the Safety Parameter Display System (SPDS). The SPDS will receive ICC transmitted data via optical isolators provided by the ICC.

a. CRT display showing core map and layouts is being developed.

b. Readout Ranges for ICC are as follows.

   i. Subcooled/superheat in °F - 300°F Subcooling to 45°F superheat.

   ii. Core exit temperatures. 200°F to 2300°F.

   iii. % level in the vessel above the core - 0 to 100%.

c. Alarms are provided on Main Control Board from the ICC Cabinets. These alarms are:

   1. SC/SH Trouble Alarm
   2. CET High Alarm
   3. Vessel % Level Aalrm

d. All ICC instrumentation readouts are displayed simultaneously providing the following information:

   1. SC/SH in °F.
   2. Core exit temperatures °F.
   3. % level above the core.

3. Describe the implementation of the back-up display(s) (including the subcooling margin monitors), how the thermocouples are selected, how they are checked for operability, and the range of the display.

Response

Class 1E back-up display is provided for CET's on the ICC panels located in the Switchgear Room.

Selection of specific core exit temperature for display will be performed by two thumb-wheel, BCD-output switches. Also, individual toggle switches will be provided to allow deletion from calculation of any or all sensor inputs. These switches will be mounted on an switch panel and interfaced to parallel I/0 lines in the computer system.

Backup display(s) for subcooling margin monitors are provided as described in Appendix A.

4. Describe the use of the primary and back-up displays. What training will the operators have in using the core exit thermocouple instrumentation? How will the operator know when to use the core exit thermocouples and when not to use them? Reference appropriate emergency operating guidelines where applicable.

Response:

The operator instructions will be modified utilizing the information presented in CEN-152 and CE-NPSD-232. Millstone 2 plant specific procedures will be modified utilizing the same functional intent as CEN-152.

5. Confirm completion of control room design task analysis applicable to ICC instrumentation. Confirm that the core exit thermocouples meet the criteria of NUREG-0737, Attachment 1 and Appendix B, or identify and justify deviations.

Response

The detailed information requirements of the displays have not, as yet, been reviewed in view of the fact the cabinets are yet to be installed. This review will be done as part of our CRDR review, as stated in the Order regarding emergency response capability issued June 14, 1984. The CETs meet the provisions of Attachment I, Appendix B of NUREG-0737.

6. Describe what parts of the systems are powered from the 1E power sources used, and how isolation from non-1E equipment is provided. Describe the power supply for the primary display. Clearly delineate in two categories which hardware is included up to the isolation device and which is not.

Response

Millstone Unit No. 2 ICC System is designed as Category 1 (Class 1E) with redundant and independent trains. (train A and train B). Each train contains stand alone processing electronics and Class 1E backup displays, which monitors, alarms, and trends ICC. Each train is powered from a separate vital bus. All inputs to the ICC system are powered from vital busses.

The primary display for the ICC system is part of SPDS. SPDS is a non 1E system with its power provided from uninterrupted power sources. 1E to non 1E isolation between the ICC and SPDS is provided by optical isolators which are part of the ICC system. When installed, the SPDS will be tested to insure that the SPDS does not adversely affect the operation of the ICC system.

7. Confirm the environmental qualification of the core exit thermocouple instrumentation up to the isolation device.

Response:

The Core Exit Thermocouples are part of the ICC detection system and as such meet the provisions of Regulatory Guide 1.97 Rev. 3 for the in vessel portion of Type K Thermocouples. The remainder of the system, outside the vessel, is qualified to the requirements of 10CFR50.49 for the system inside containment including the penetrations. For mild environment locations outside containment, the new system including cabling to be installed will meet the provisions of IEEE 323 and 344 which includes up to the isolation devices. The qualification information is available for review.

ENCLOSURE 3

MILESTONES FOR IMPLEMENTATION OF

INADEQUATE CORE COOLING INSTRUMENTATION

1. Submit final design description (by licensee) (complete the documentation requirements of NUREG-0737, Item II.F.2, including all plant-specific information items identified in applicable NRC evaluation reports for generic approved systems).

   Response: The information is contained in Reference (1) and this submittal

2. Approval of emergency operating procedure (EOP) technical guidelines - (by NRC).

   Note: This EOP technical guideline which incorporates the selected system must be based on the intended uses of that system as described in approved generic EOP technical guidelines relevant to the selected system.

   Response: As stated, this is the responsibility of the NRC.

3. Inventory Tracking Systems (ITS) installation complete (by licensee).

   Response: End of the 1985 Refuel Outage

4. ITS functional testing and calibration complete (by licensee).

   Response: End of the 1985 Refuel Outage

5. Prepare revisions to plant operating procedures and emergency procedures based on approved EOP guidelines (by licensee).

   Response: These procedures will be incorporated one year after NRC approval of the Generic ERGs.

6. Implementation letter report to NRC (by licensee).

   Response: After approval of CEN-152 by the NRC and installation of the system.

7. Perform procedure walk-through to complete task analysis portion of ICC system design (by licensee).

   Response: The procedure walk-through will be incorporated into the schedule for the new plant simulator.

8. Turn on system for operator training and familiarization.

   Response: End of the 1985 Refuel Outage.

9. Approval of plant-specific installation (by NRC).

   Response: As stated, this is the responsibility of the NRC.

10. Implement modified operating procedures and emergency procedures (by licensee).

    Response: The current schedule is approximately one year after the NRC approves CEN-152.