APR 22 1992

Docket Nos. 50-250, 50-251
License Nos. DPR-31, DPR-41

Florida Power and Light Company
ATTN: Mr. J. H. Goldberg
President - Nuclear Division
P. O. Box 14000
Juno Beach, FL 33408-0420

Gentlemen:

SUBJECT: MEETING TO DISCUSS NEW LOAD SEQUENCERS AND INSTRUMENT SETPOINTS

This letter refers to the meeting conducted at your request at the NRC Region II offices in Atlanta on January 9, 1992. The purpose of the meeting was to allow the licensee to make a presentation on the status of the new load sequencers and on the instrument setpoints program.

It is our opinion that this meeting was beneficial and provided a better understanding of the issues and their current status.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 1, Title 10, Code of Federal Regulations, a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

Should you have any questions concerning this letter, please let us know.

Sincerely,

Original signed by

Luis A. Reyes, Director
Division of Reactor Projects

Enclosures:
1. List of Attendees
2. Presentation Summary

cc w/encls:
K. N. Harris, Sr. Vice President
Nuclear Operations
Florida Power and Light Co.
P. O. Box 14000
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cc w/encls cont'd: See page 2

IE01

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T. V. Abbatiello
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bcc w/encl:
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J. Johnson, RII
K. Landis, RII
Document Control Desk

Ross Butcher, Sr. Resident Inspector
U.S. Nuclear Regulatory Commission
P. O. Box 1448
Homestead, FL 33090

RII:DRP	RII:DRP	RII:DRP
RJF for RSchin	KLandis	MSinkule
04/22/92	04/22/92	04/22/92

ENCLOSURE 1

LIST OF ATTENDEES

NRC

M. V. Sinkule, Chief, Reactor Projects Branch 2, Division of Reactor Projects (DRP), Region II (RII)
T. A. Peebles, Chief, Operations Branch, Division of Reactor Safety (DRS), RII
K. D. Landis, Chief, Reactor Projects Section 2B, DRP, RII
R. V. Crlenjak, Chief Operational Programs Section, DRS, RII
M. B. Shymlock, Chief, Plant Systems Section, DRS, RII
R. C. Butcher, Senior Resident Inspector, Turkey Point, DRP, RII
M. T. Janus, Project Engineer Intern, DRP, RII

FPL

T. J. Luke, Acting Site Engineering Manager
E. J. Weinkam, Licensing Manager
D. L. Smith, Discipline Chiefs and Staff Production Supervisor, FPL
W. A. Busch, Senior Electrical Staff Engineer, FPL
J. E. Knorr, Licensing Engineer

ENCLOSURE 2

FLORIDA POWER & LIGHT
April 3, 1992

Introduction.....E. J. Weinkam

Setpoints Program - D. L. Smith

Sequencer Update - W. A. Busch

TURKEY POINT INSTRUMENT SETPOINT PROGRAM

FLIA75

DEFINITIONS

DEVICE	DEFINITIONS/EXAMPLES
1) Instrument Loops	- 4-20 ma Instrument Loops - Contain Transmitters, Bistables, Indicators, etc. - May Have Input to Instrument Cabinets, e.g., RPS, or ESFAS
2) Protective Relays	- Relays With Adjustable Settings, e.g., overcurrent, undervoltage or underfrequency - Have Characteristic Curves
3) Process Switches	- Actuate at a Given Point - Measure flow, level, pressure - Single Purpose Devices

PRIORITIZATION OF SETPOINT DOCUMENTATION

1) Protective Relays - Complete 6/92

2) Instruments - Currently in Progress
   - Instrument Loops
   - Process Switches

3) Devices Presently Included on Drawings
   - Plan June '93 for Decision to put in List Format
     - Timing Relays
     - Safety Reliefs
     - Pneumatic Devices

4) Others - No Setpoint Drawing Required
   - Area Radiation
   - Fire Detectors

FLA74

PTN SAFETY RELATED INSTRUMENT SETPOINT PROGRAM

FLUA50

ORIGINAL INSTRUMENT SETPOINTS

- *Determined by AE, NSSS or Vendor (appear in many documents)*
- *Provided In Process Units (gal., PSIA, etc.)*
- *Scaling and Calibration Units Typically Done by Plants (volts, ma, etc.)*

PRIOR ACTIONS

FPL SETPOINT METHODOLOGY STANDARD ISSUED 8/88

- Revision 0 Endorsed Square Root Of The Sum Of The Squares
- Revision 2 Endorses ISA S67.04 Methodology

PTN DESIGN BASIS RECONSTITUTION

- Westinghouse Performed RPS/ESFAS Settings To New Methodology
- New Tech Specs With "5 Column Methodology"
- New Methodology Did Not Show Past Setpoints Inadequate

PTN INDEPENDENT ASSESSMENT

- Performed August 1991

MAIN PROGRAM POINTS

1. Provide Documentation of Setpoints for Instruments

2. Safety Related Instrument Setpoint Calculations/Methodology

PROVIDE DOCUMENTATION OF SETPOINTS FOR INSTRUMENTATION

1) Gather Existing Instrument Setpoints From Existing Documents

2) Create An Instrument Setpoint Document

3) Populate The Document With Information Gathered

4) Will Be Done For Non-Safety Instruments Also

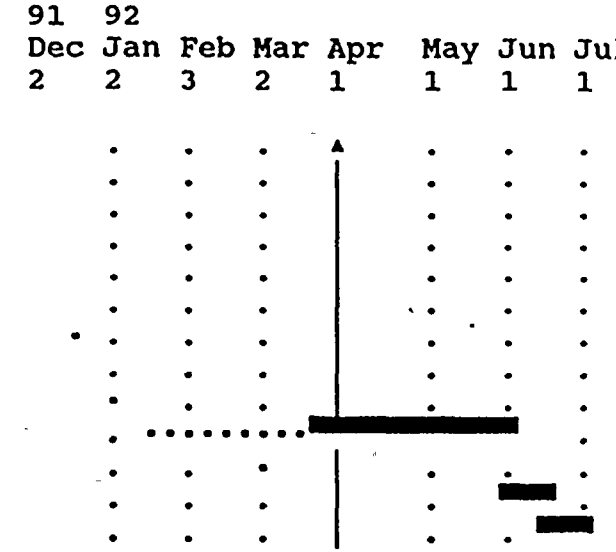
MAGNITUDE OF EFFORT

SETPOINT DRAWING CREATION

- Form Team Combined of 1 Person Each From Engineering, Tech Staff, and Maintenance
- Provide Schedule for Remaining Setpoints by July '92

Instrument Setpoint Document Schedule

Task Name	Start Date	End Date
Obtain Passport Approval	Complete	
Investigate Passp. Capability	Complete	
Decide on Passport or dBase	Complete	
Determine Format & Content	Complete	
Obtain Ebasco Program	Complete	
Make Field Changes	Complete	
Change Report Format	Complete	
Form Team: Eng, Tech, Maint.	Complete	
Prioritize Data Gathering	Complete	
Data Gathering	15-Jan-92	1-Jun-92
Report Qtrly. Show Progress	Complete	
Report Qrtly. Show Progress	1-Jun-92	15-Jun-92
Assess Effectiveness of Work	15-Jun-92	1-Jul-92



Rev. 3/31/92

SAFETY RELATED SETPOINT CALCULATIONS/ METHODOLOGY

1. Setpoint Standard Rev 2 Issued

2. Gather Calculations

3. Review For Adequacy

4. Enhance or Re-create as Required

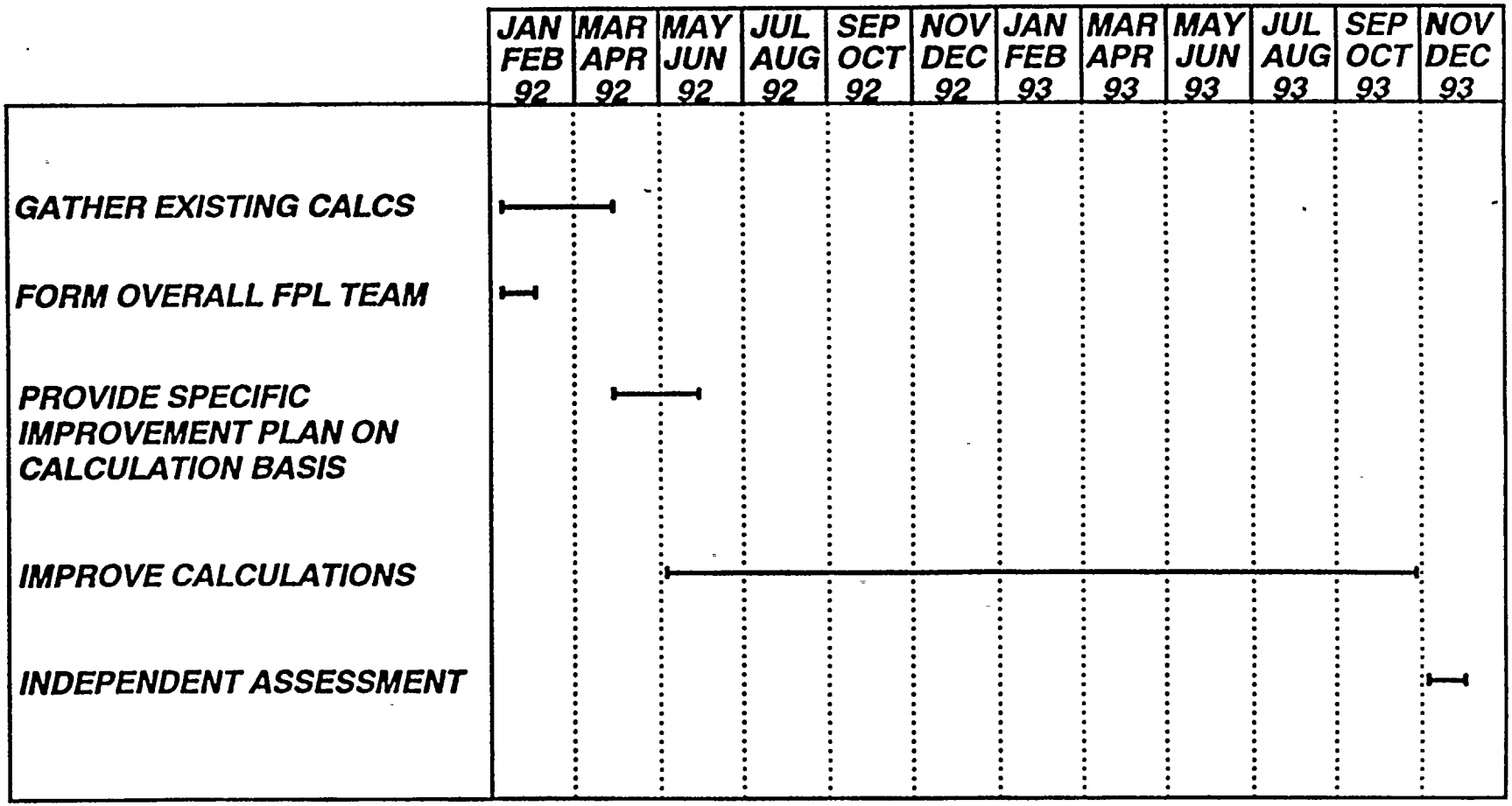
FL\A52

MAGNITUDE OF EFFORT SETPOINT CALCULATIONS/METHODOLOGY

- *7 Manyears Plus $300,000 For Required Support NSSS/AE*
- *To Be Completed December 1993*

FL/a54

SETPOINT CALCULATION SCHEDULE



FLVA55

TURKEY POINT UNITS 3 & 4

FAILURE OF LOAD SEQUENCER AUTO-TEST RELAY

- *Background*
- *Description of the Event*
- *Short Term Actions Taken*
- *Investigations of the Failure & Results*
- *Long Term Corrective Actions*

FLVA76

BACKGROUND

- *Emergency Load Sequencers Implemented using Programmable Logic Controllers*

- *Safety Function is to Load Required Engineered Safety Feature Equipment in the Event of a Safety Injection Signal and/or Loss of Offsite Power*

- *Automatic Test Feature - Normal Operating Mode*

EVENT DESCRIPTION

- *On December 10, 1991, During A Routine System Walkdown, Sequencer 4A was Found to have Dropped Out of Auto-Test.*

- *Sequencer 4A was Declared Inoperable and, in Accordance with Technical Specification Action Statements, Unit 4 was Brought to Hot Standby Conditions within 6 Hours, and then Hot Shutdown within the Following 6 Hours.*

- *Troubleshooting Identified an Electromagnetic Relay on a Test Circuit Output Card which Failed in the Contact Closed State.*

- *The Card was Replaced and the 4A Sequencer was Returned to Service.*

SHORT TERM CORRECTIVE ACTION

- *Test Selector Switch Administratively Controlled in the Off Position*

- *Manual Testing is Performed Once Every 30 Days*

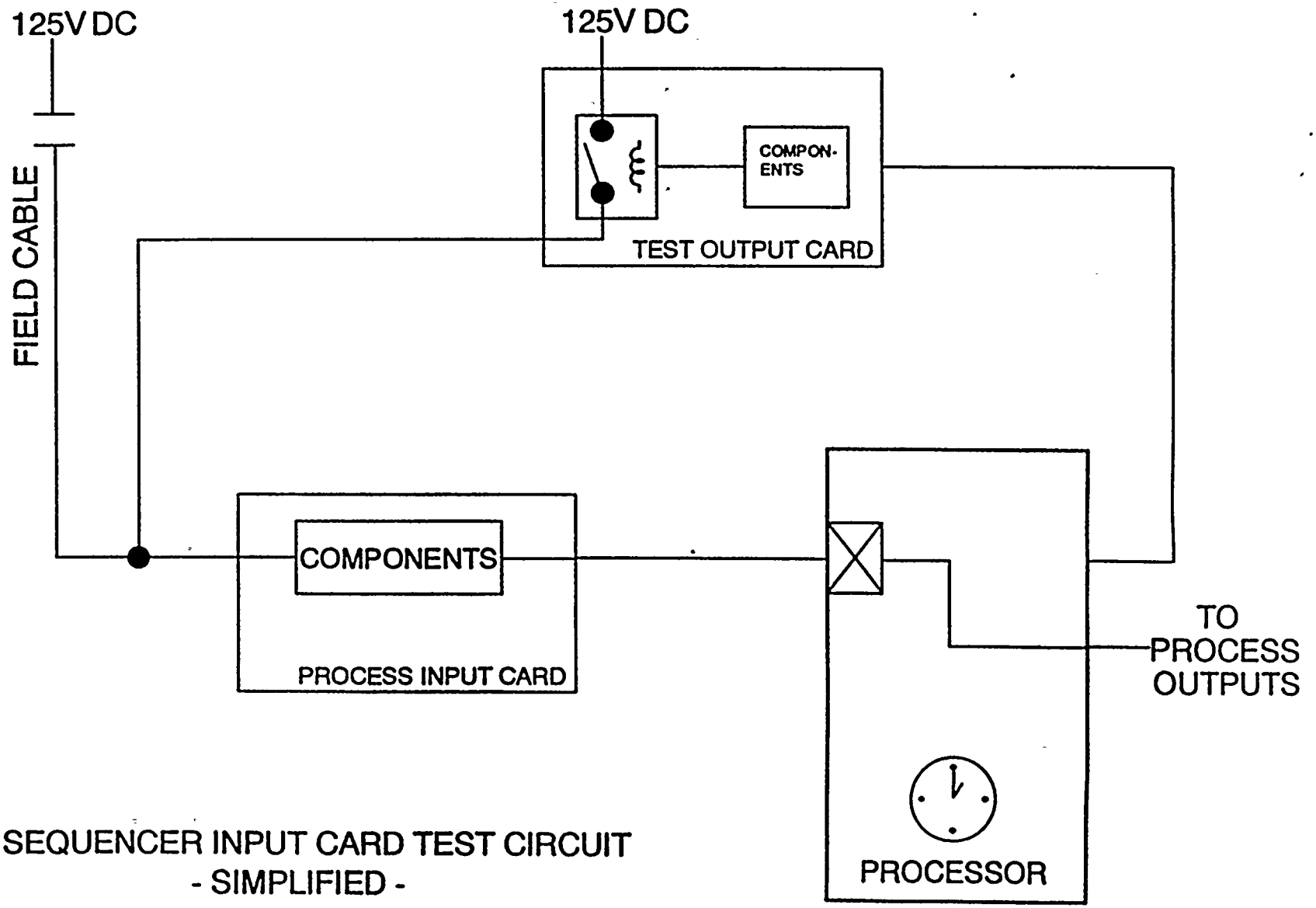
- *Visual Inspections of Local Annunciators and Indicating Lights were Instituted on an 8 and 24 Hour Basis*

INVESTIGATIONS

- *Root Cause Analysis - Metal Migration on the Relay Contacts Due to Inrush Currents Resulting From the Capacitive Effects of Long Field Cables.*

- *Failure Modes and Effects Analysis - No Other Significant Modes of Failure. Suggested Methods for Diagnostic and Test Enhancements.*

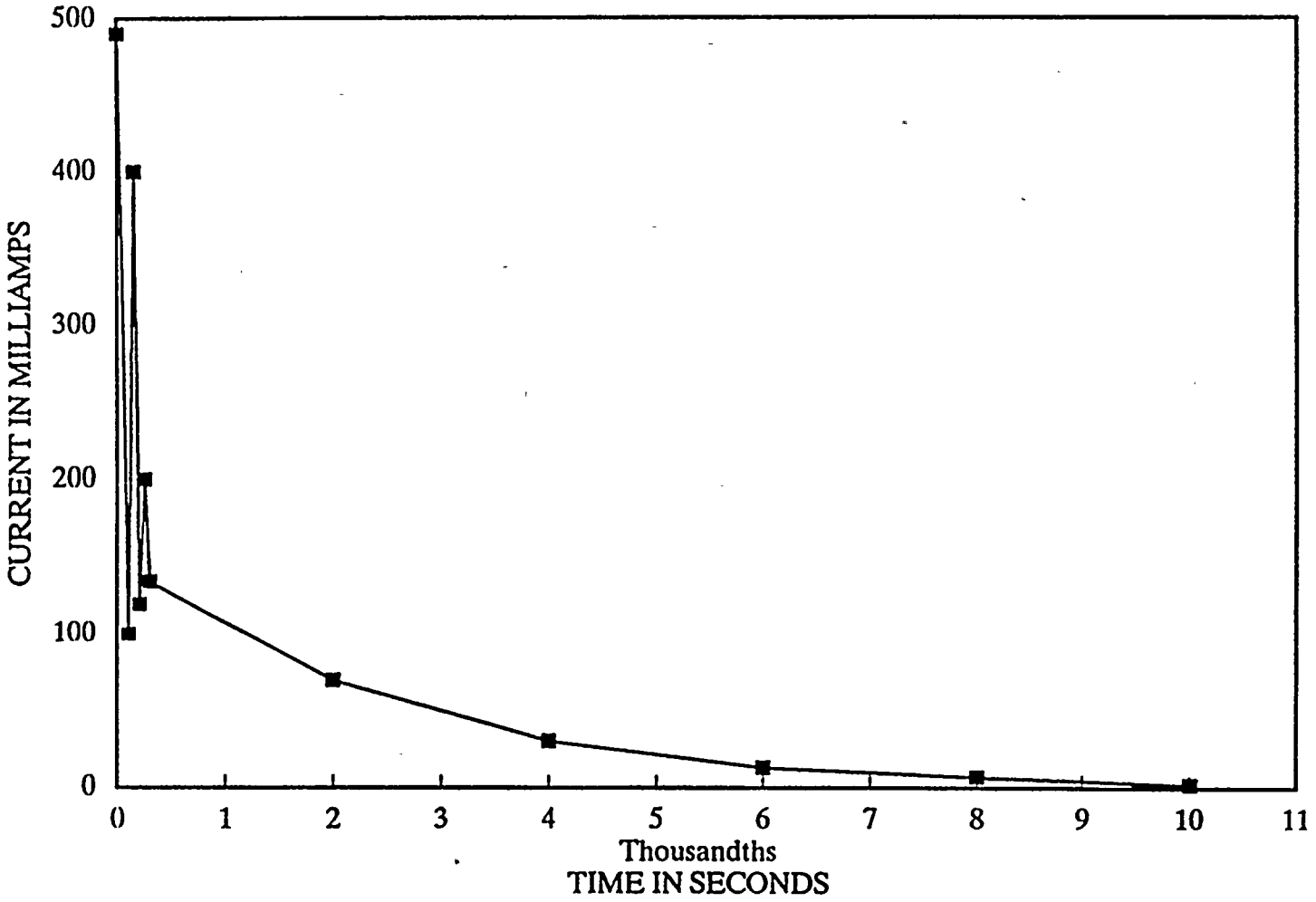
- *Test Frequency Significance Relative to Published PRA Results - 30 Day Manual Test is Consistent with Published Results. Auto Test on a 1 Hour Frequency Reduces Probability of Core Melt $\approx$ 2%*



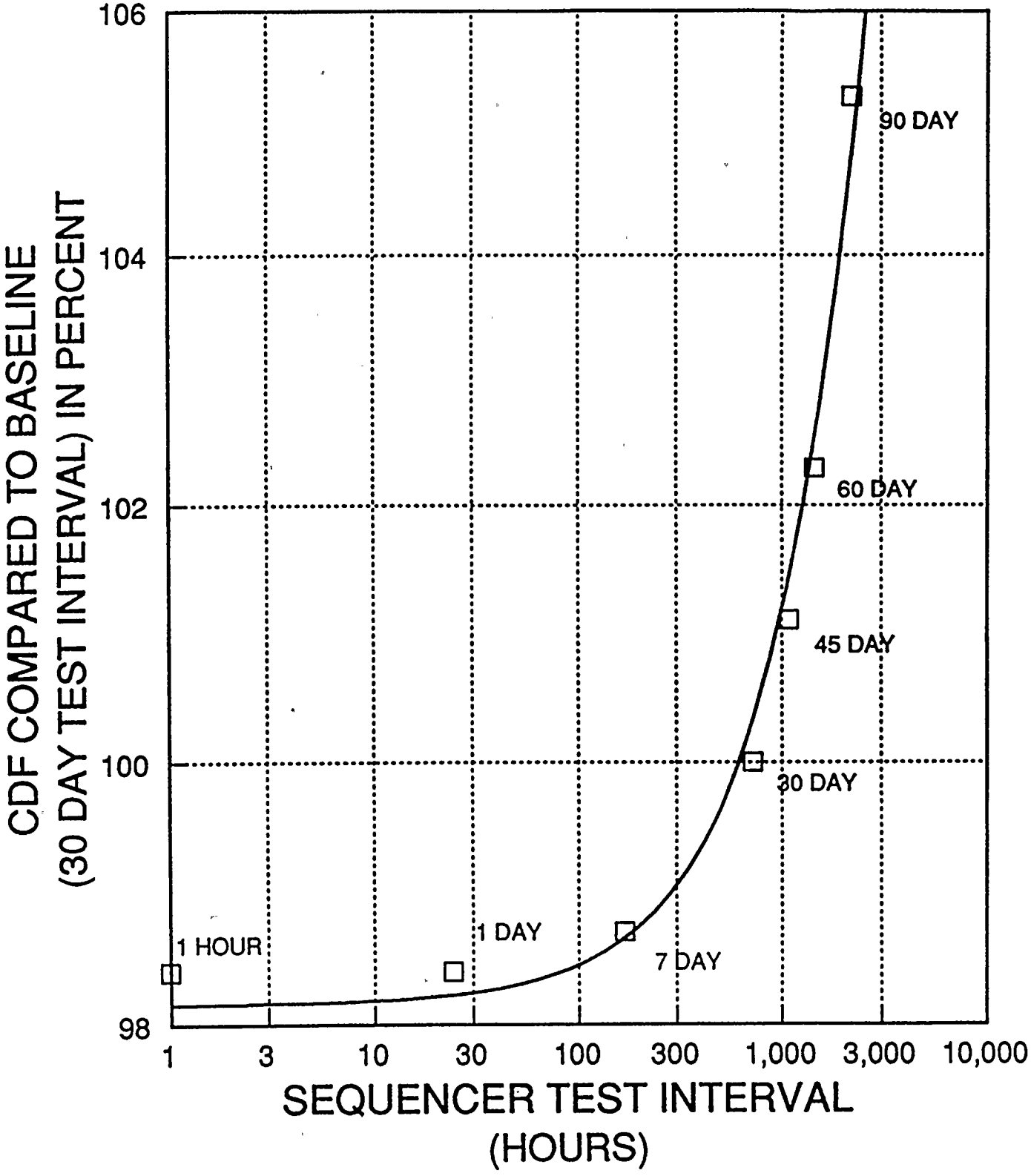
SEQUENCER INPUT CARD TEST CIRCUIT
- SIMPLIFIED -

TURKEY POINT SEQUENCER

INRUSH CURRENT ON OW RELAYS



SENSITIVITY OF ESTIMATED MEAN CDF TO SEQUENCER TEST INTERVAL



LONG TERM CORRECTIVE ACTION

- *Engineering Packages to be Completed Prior to Refueling Outages*
- *Change Test Circuit Power Supply. Sequencer Remains Functional if Relay Fails.*
- *Resistors to Limit Inrush Current on DC Relays to Extend Relay Life*
- *Reduce Autotest Frequency from Once Every 3 Minutes to Once an Hour to Extend Relay Life*
- *Diagnostics and Test Enhancements*

SUMMARY

- *Current*
  - *Determine Root Cause*
  - *Eliminate Failure Mode by Disabling Relay Circuit*
  - *Performing Surveillance Consistent with PRA*

- *Future*
  - *Conservative Design Change Reinstating Auto-Test*
  - *Restore Original Design Intent*
  - *Enhance Diagnostic Capabilities*

FLVA83