

FEB 21 1985

Docket No. 50-461

APPLICANT: Illinois Power Company
FACILITY: Clinton Power Station
SUBJECT: SUMMARY OF MEETING TO DISCUSS SAFETY PARAMETER DISPLAY
SYSTEM (SPDS) FOR CLINTON POWER STATION

A meeting was held between the NRC staff and Illinois Power Company to discuss the results of the corrective action plan for the SPDS proposed by the applicant to resolve concerns identified by the staff during the pre-implementation audit at the site. Enclosure 1 is a list of meeting attendee's and Enclosure 2 is the meeting agenda. Copies of the vu-graphs presented by the participants identified in the agenda are contained in Enclosure 3.

Following the meeting the staff caucused, after which, the applicant was informed that the corrective action plan appeared to address all the staff concerns identified during the SPDS pre-implementation audit. The staff further stated that it needed some additional time to review in detail the information presented prior to making a final decision in the acceptability of the program. If any significant problems are identified during this review the staff stated the applicant will be notified as soon as possible and that a conference call will be held no later than March 8, 1985 to advise the applicant on the acceptability of the program.

Original signed by:

B. Siegel, Project Manager
Licensing Branch No. 2, DL

Enclosures: As stated

cc: See next page

Distribution:
Docket file
NRC PDR
Local PDR
PRC System
NSIC
LB#2 Reading
Goddard, OELD
BSiegel
EHylton

8502270042 850221
PDR ADOCK 05000461
F PDR

*Previous concurrences concurred on by:

*LB#2/DL/PM	BS for	*LB#2/DL/BC
BSiegel:lb	ASchwencer	
02/21/85	02/21/85	



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

FEB 21 1985

Docket No. 50-461

APPLICANT: Illinois Power Company
FACILITY: Clinton Power Station
SUBJECT: SUMMARY OF MEETING TO DISCUSS SAFETY PARAMETER DISPLAY
SYSTEM (SPDS) FOR CLINTON POWER STATION

A meeting was held between the NRC staff and Illinois Power Company to discuss the results of the corrective action plan for the SPDS proposed by the applicant to resolve concerns identified by the staff during the pre-implementation audit at the site. Enclosure 1 is a list of meeting attendee's and Enclosure 2 is the meeting agenda. Copies of the vu-graphs presented by the participants identified in the agenda are contained in Enclosure 3.

Following the meeting the staff caucused, after which, the applicant was informed that the corrective action plan appeared to address all the staff concerns identified during the SPDS pre-implementation audit. The staff further stated that it needed some additional time to review in detail the information presented prior to making a final decision in the acceptability of the program. If any significant problems are identified during this review the staff stated the applicant will be notified as soon as possible and that a conference call will be held no later than March 8, 1985 to advise the applicant on the acceptability of the program.

A handwritten signature in cursive script that reads "B. Siegel".

B. Siegel, Project Manager
Licensing Branch No. 2, DL

Enclosures: As stated

cc: See next page

Clinton

Mr. Frank A. Spangenberg
Director of Nuclear Licensing &
Configuration Management
Clinton Power Station
P. O. Box 306
Mail Code V920
Clinton, Illinois 61727

Mr. D. P. Hall
Vice President
Clinton Power Station
P. O. Box 678
Clinton, Illinois, 61727

Mr. H. R. Victor
Manager-Nuclear Station Engineering Dpt.
Clinton Power Station
P. O. Box 678
Clinton, Illinois 61727

Sheldon Zabel, Esquire
Schiff, Hardin & Waite
7200 Sears Tower
233 Wacker Drive
Chicago, Illinois 60606

Mr. Fred Christenson
Resident Inspector
U. S. Nuclear Regulatory Commission
RR 3, Box 229 A
Clinton, Illinois 61727

Mr. R. C. Heider
Project Manager
Sargent & Lundy Engineers
55 East Monroe Street
Chicago, Illinois 60603

Mr. L. Larson
Project Manager
General Electric Company
175 Curtner Avenue, N/C 395
San Jose, California 95125

Mr. Allen Samuelson, Esquire
Assistant Attorney General
Environmental Control Division
Southern Region
500 South Second Street
Springfield, Illinois 62706

Jean Foy, Esquire
511 W. Nevada
Urbana, Illinois 61801

Richard B. Hubbard
Vice President
Technical Associates
1723 Hamilton Ave. - Suite K
San Jose, CA 95125

MEETING TO DISCUSS IP SPDS ACTION PLAN 2-20-85

<u>NAME</u>	<u>AFFILIATION</u>
Frank A. Spangenberg	Director-Nuclear Licensing, Illinois Power
Terry L. Riley	Project Engineer - Licensing, IP
P. J. Telthorst	Project Engineer - Licensing IPC
Charles O. Hopkins	Univ. of ILL, Consultant to IP
Byron L. Siegel	NRC DL/Licensing PM
Ann Ramey-Smith	NRC/DHFS/HFEB - Control Room
George Lapinsky	NRC/DHFS/HFEB - SPDS
Gregory Minor	MHB/IAG
George Edgar	N&H/IPC
Richard O. Snelson	IP/NSED
Jesus Basurto	ICSB/NRR
Mike McCoy	NRC/DHFS/PSRB
Tim O'Donoghue	SAIC/NRC Human Factors Consultants
Peter C. Carr	SERCH Lic./Bechtel Power Corp.

IP PRESENTATION AGENDA

<u>TOPIC</u>	<u>PRESENTED BY</u>
1. INTRODUCTION	F. A. SPANGENBERG
2. OBJECTIVES	T. L. RILEY
3. NRC PRE-IMPLEMENTATION AUDIT RESULTS	T. L. RILEY
4. IP SPDS CORRECTIVE ACTION PLAN	R. O. SNELSON, T. L. RILEY, P. J. TELTHORST, AND DR. C. O. HOPKINS
5. IP SCHEDULE - IMPLEMENTATION OF CHANGES	R. O. SNELSON
6. QUESTION AND ANSWER	ALL
7. DISCUSSION OF NEXT NRC AUDIT - PURPOSE AND SCHEDULE	ALL

ILLINOIS POWER COMPANY (IP)
CLINTON POWER STATION (CPS)

SAFETY PARAMETER DISPLAY SYSTEM
(SPDS)

TLR

2/20/85

IP/NRC MEETING OBJECTIVES

- RESPOND TO NRC STAFF AND SAIC CPS AUDIT CONCERNS
- IDENTIFY REQUIRED SPDS DESIGN TO FULLY IMPLEMENT
- OBTAIN NRC STAFF REVIEW/APPROVAL TO IMPLEMENT AS PLANNED - AVOID CPS PROJECT SCHEDULE IMPACT
- DISCUSS FUTURE NRC STAFF REVIEWS AND AUDITS -
- IDENTIFY REQUIRED IP DOCUMENTATION SUBMITTALS TO STAFF AND SCHEDULES

NRC STAFF/SAIC
CPS SPDS PRE-IMPLEMENTATION AUDIT
CONCERNS/RESULTS

- DECEMBER 12-13, 1984, AT CPS
- PURPOSES OF AUDIT
 - * REVIEW SPDS DESIGN PROCESS
 - * PROVISIONS FOR ADEQUATE SPDS PARAMETERS
 - * SAFETY SYSTEM ISOLATION
 - * DATA RELIABILITY AND VALIDATION
 - * HUMAN FACTORS INCORPORATION
- IP LINE-BY-LINE EVALUATION - (SEE "BRIEFING BOOKS")

NRC STAFF/SAIC
CPS SPDS PRE-IMPLEMENTATION AUDIT
CONCERNS/RESULTS

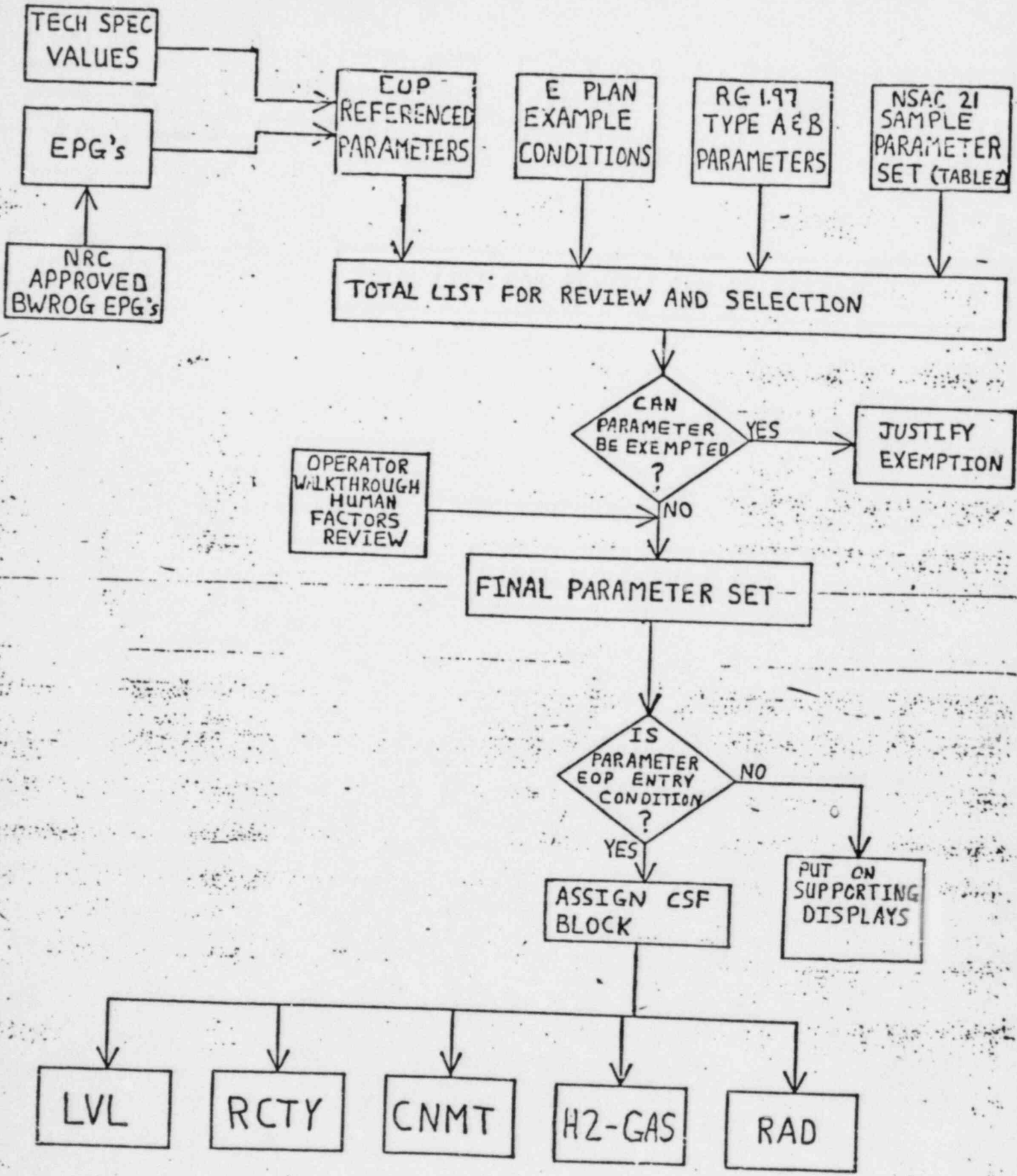
- CONCERNS/RESULTS
 - * DESIGN VALIDATION AUDIT NEEDED
 - * PARAMETER SELECTION - VARIABLES SELECTED ADEQUATE EXCEPT
 - RADIOACTIVITY CONTROL MUST BE ON SPDS DISPLAY -
CONTAINMENT/DRYWELL HI RAD
STACK NOBLE GAS RELEASE RATE
 - SCOPE OF VALIDATION EFFORTS -
SPDS/EOP WALKTHROUGHS
DYNAMIC SIMULATION TEST
 - UPDATED PARAMETER LIST NEEDED
 - * SYSTEM RELIABILITY
 - SYSTEM HIGHLY RELIABLE
 - ICSB CONCLUSIONS IN FUTURE SER
 - * SAFETY SYSTEM ISOLATION
 - ICSB REQUESTED ADDITIONAL INFORMATION
IP RESPONDED (U-0779 , DATED 1/11/85)
 - ICSB CONCLUSIONS IN FUTURE SER

NRC STAFF/SAIC
CPS SPDS PRE-IMPLEMENTATION AUDIT
CONCERNS/RESULTS

- CONCERNS/RESULTS
 - * DISPLAY DATA VALIDATION
 - REACTOR SYSTEM INTEGRITY. CRITICAL SAFETY FUNCTIONS (CSFs) INPUTS
 - RECOMMENDED ADDITIONAL DATA VALIDATION TECHNIQUES BE CONSIDERED BY IP

 - * HUMAN FACTORS
 - SEPARATE DISPLAYS FOR EACH PLANT OPERATING MODE
 - COLOR CODING -
STEREOTYPICAL EXPECTATIONS
COLOR DISCRIMINATION
 - REDUNDANT CODING NEEDED (E.G., "SHAPE" CODING)
 - "STATUS BOX" CONCEPT -
CONTINUOUS PARAMETER DISPLAY OR ALERTING
MECHANISM WITH EASY STATUS ACCESS
VARIOUS INPUTS REQUIRED
 - STANDARD ABBREVIATIONS

SPDS PARAMETER SELECTION FLOW CHART



CRITICAL SAFETY FUNCTIONS

- CORRESPOND TO SYMPTOM-ORIENTED EOPs

- *LVL

- LEVEL CONTROL-EMERGENCY

- *CNMT

- CONTAINMENT CONTROL-EMERGENCY

- *RCTY

- REACTIVITY CONTROL-EMERGENCY

- *H2-GAS

- COMBUSTIBLE GAS CONTROL-EMERGENCY

- *RAD

- SECONDARY CONTAINMENT/RADIATION RELEASE
CONTROL-EMERGENCY

CRITICAL SAFETY FUNCTION INPUTS

• CNMT

SUPP POOL TEMP	95 F
DRYWELL TEMPERATURE	135 F
DRYWELL PRESSURE	2 PSIG
SUPP POOL LEVEL	19'5"
SUPP POOL LEVEL	18'11"
CONTAINMENT TEMP	122 F

• H2-GAS

HYDROGEN	1%
----------	----

• LVL

REACTOR LEVEL	LEVEL 3
DRYWELL PRESSURE	2 PSIG
REACTOR PRESSURE	1064.7 PSIG
REACTOR MSIV	SCRAM
DRYWELL FL DRN FLC	ISOLATION HIGH

• RAD

SECONDARY CONT DP	.125"
FUEL BLDG EXH VENT	ALARM
OFFSITE RAD RATE	ALERT LEVEL
FUEL BUILDING DP	.125"
SEC CONT HVAC DT	ALARM
SEC CONTAIN TEMP	ALARM
SEC CONT AREA RAD	ALARM
SEC CONT FL DR LEV	HIGH HIGH

• RCTY

REACTOR

SCRAM, WITH POWER $> 3\%$ *for 1 sec.*
OR INDETERMINATE

RADIOACTIVITY PARAMETERS

- OFFSITE RELEASE RATE (CSF AND SUPPORTING DISPLAYS)
 - *HVAC STACK - ACTIVITY X FLOW
 - *SGTS - ACTIVITY X FLOW

- MAJOR ACCIDENT ASSESSMENT (RAD AND CNMT SUPPORTING DISPLAYS)
 - *CONTAINMENT GAMMA
 - *DRYWELL GAMMA

- SECONDARY CONTAINMENT (CSF ONLY)
 - *SUMMARY ALARM
 - FUEL BLDG EXHAUST
 - CONTAINMENT EXHAUST
 - CONTMT FUEL XFER POOL VENT PLENUM
 - AUX BLDG WEST
 - RWCU PUMP AREA
 - RCIC EQUIP ROOM
 - FUEL XFER, FUEL BLDG
 - SPENT FUEL STG AREA
 - CNMT EQUIP HATCH
 - CRD SERVICE AREA
 - NEW FUEL STORAGE AREA
 - FUEL XFER ISO VLV ROOM
 - FUEL BLDG FUEL HANDLING PLANT
 - AUX BLDG CAM
 - FUEL BLDG CAM
 - CNTMT CONTINUOUS PURGE

CONCLUSION: ADEQUATE COVERAGE

SECONDARY CONTAINMENT PARAMETERS

• RADIOACTIVITY

COVERED

• FLOOR DRAIN LEVELS

*SUMMARY ALARM

LPCS AREA SUMP
HPCS AREA SUMP
RHR-A AREA SUMP
RHR-B AREA SUMP
RHR-C AREA SUMP
RCIC AREA SUMP
AUX BLDG FLOOR DRAIN SUMP
FUEL BLDG FLOOR DRAIN SUMP

• AREA TEMPERATURES

*SUMMARY ALARM

MSL PIPE TUNNEL
RHR A ROOM
RHR HX A ROOM
RHR B ROOM
RHR HX B ROOM
RHR C ROOM
RCIC ROOM
RCIC EQUIP AREA COOLER
LPCS ROOM
HPCS ROOM
RWCU PUMP ROOM A
RWCU PUMP ROOM B
RWCU PUMP ROOM C
MSIV OUTBRD ALARM

• AREA HVAC DIFFERENTIAL TEMPERATURES

*SUMMARY ALARM

MSL PIPE TUNNEL
RHR HX A ROOM
RHR HX B ROOM
RCIC EQUIP ROOM
RWCU PUMP ROOM A
RWCU PUMP ROOM B
RWCU PUMP ROOM C

CONCLUSION: ADEQUATE COVERAGE

COMPARISON OF
PREVIOUS PARAMETER SET WITH
CURRENT PARAMETER SET

PREVIOUS PARAMETERS

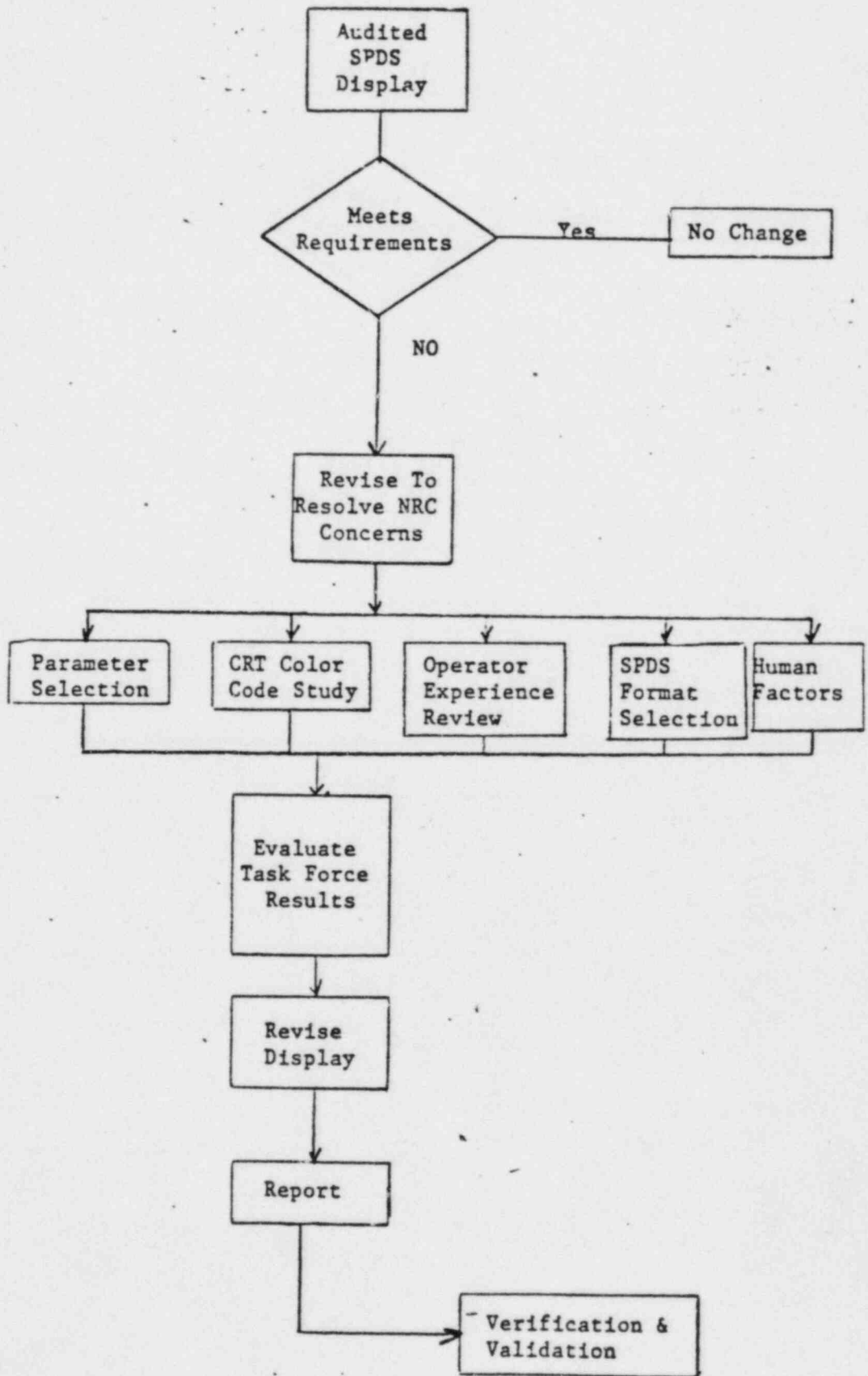
APRM (NEUTRON FLUX)
SRM (NEUTRON FLUX)
REACTOR WATER LEVEL
REACTOR STEAM FLOW
REACTOR FEED FLOW
TOTAL CORE FLOW
REACTOR PRESSURE
DRYWELL FLOOR DRAIN SUMP FLOW
DRYWELL PRESSURE
CONTAINMENT PRESSURE
CONTAINMENT GROUP ISOLATION
SCRAM DISCHARGE VOLUME
DRYWELL TEMPERATURE
CONTAINMENT TEMPERATURE
SUPPRESSION POOL WATER LEVEL
SUPPRESSION POOL TEMPERATURE
CONTAINMENT HYDROGEN CONCENTRATION

PARAMETERS DELETED

STEAM FLOW
FEED FLOW

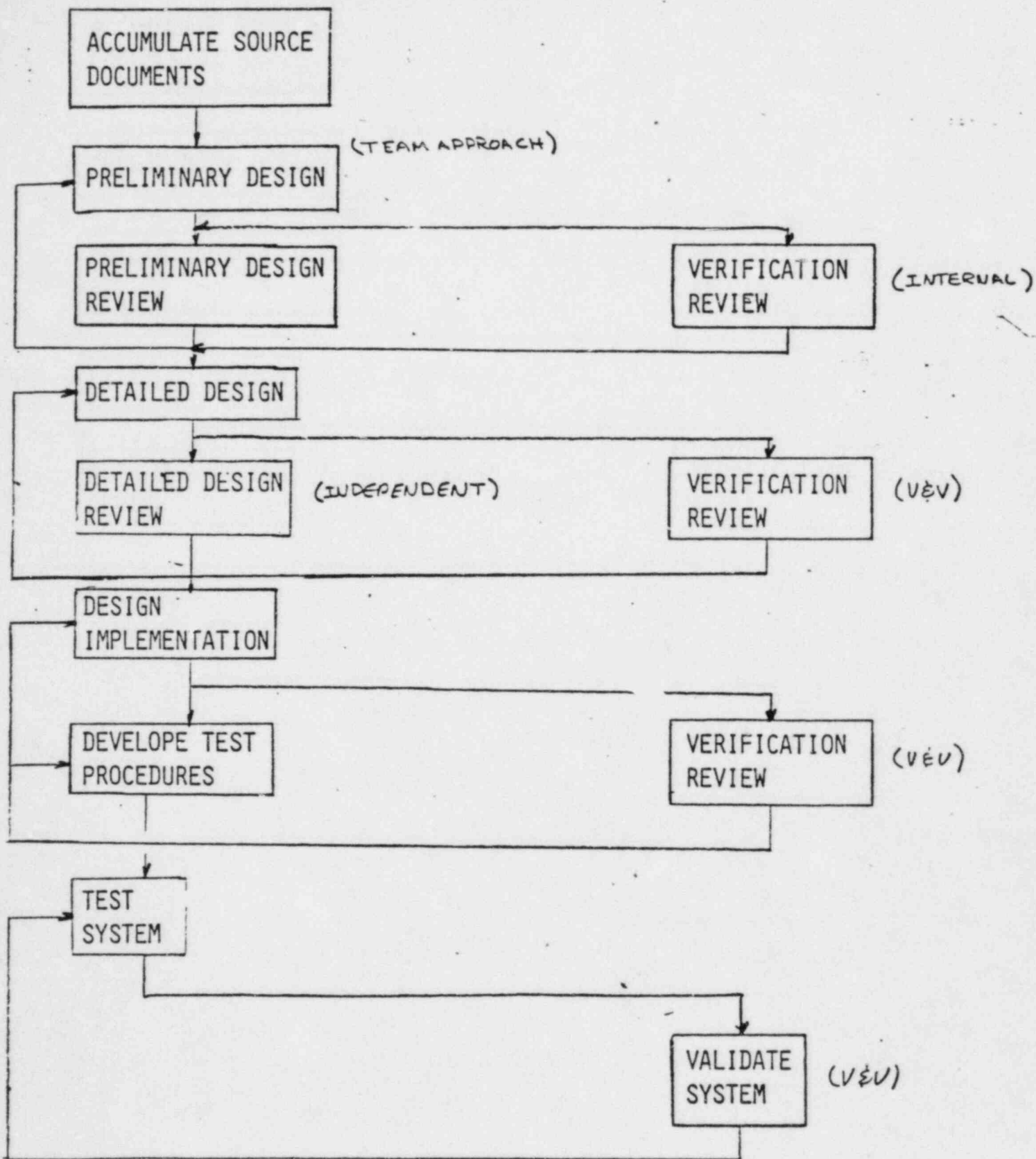
PARAMETERS ADDED

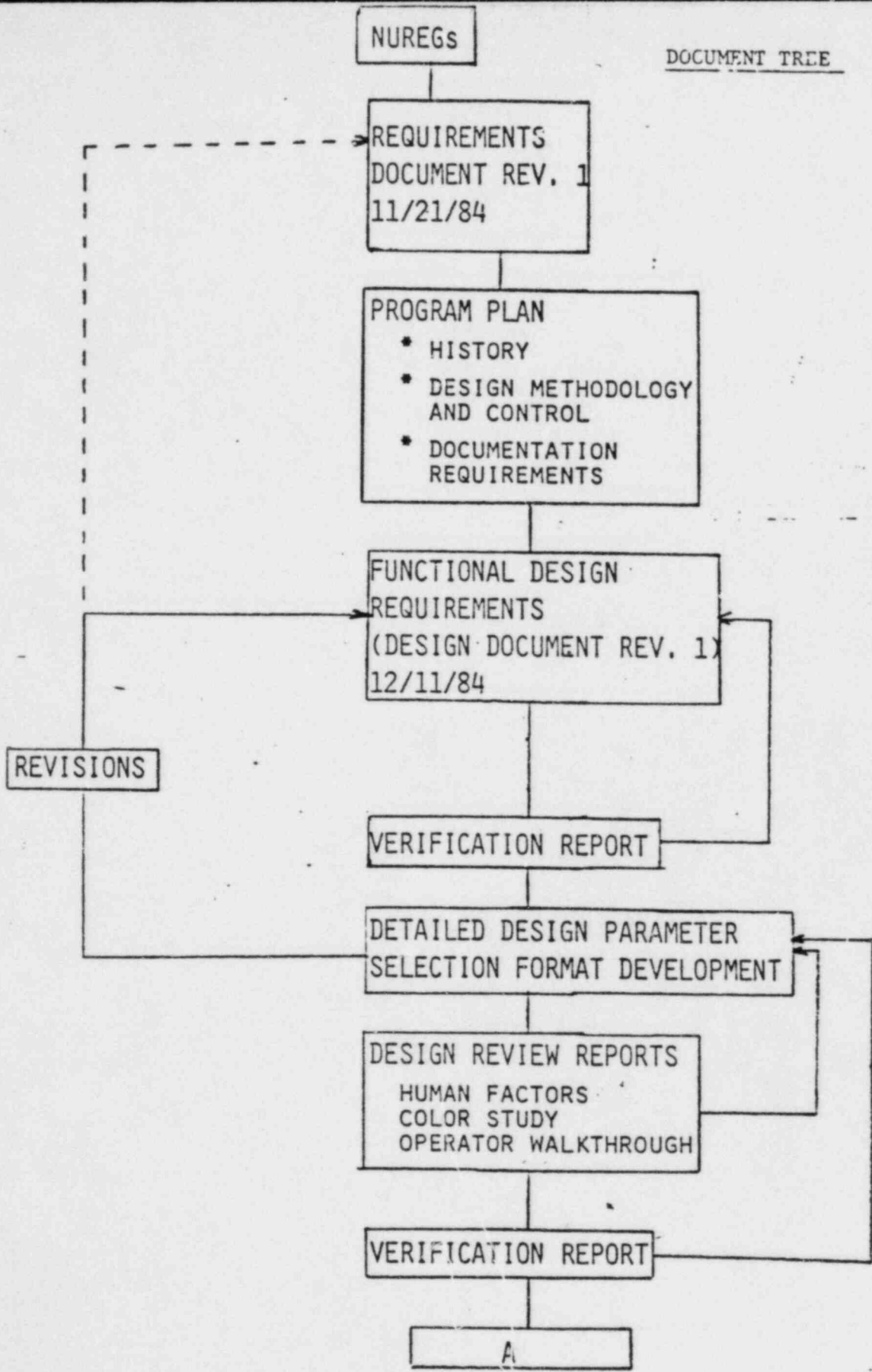
OFFSITE RADIOACTIVITY RELEASE RATE
CONTAINMENT AND DRYWELL GAMMA
SECONDARY CONTAINMENT RADIATION
SECONDARY CONTAINMENT SUMP LEVELS
SECONDARY CONTAINMENT TEMPERATURE
SECONDARY CONTAINMENT DIFFERENTIAL TEMPERATURES
ATWS
REACTOR TEMPERATURE
BORON INJECTION DEMAND

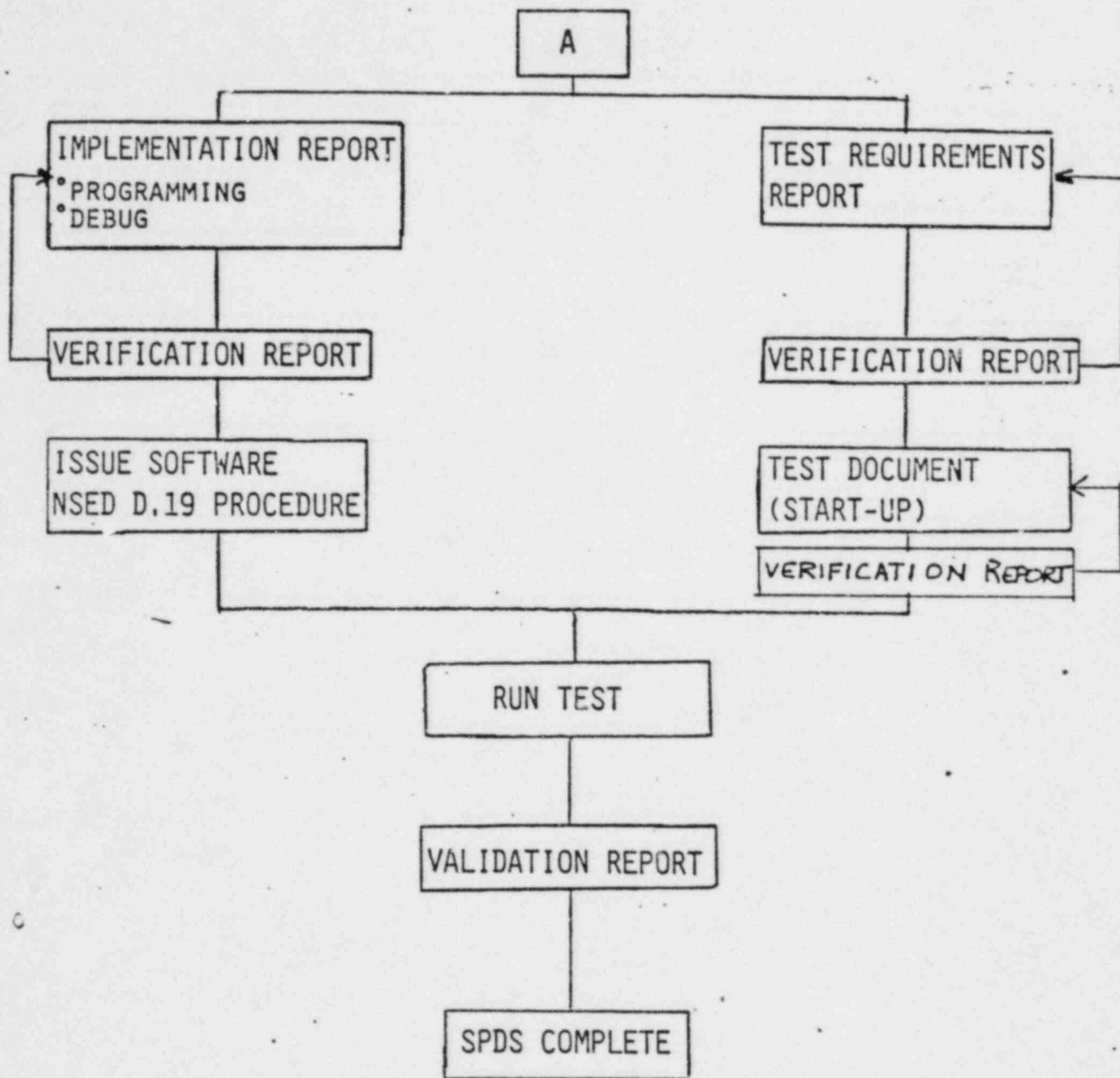


TASK FORCE FLOW CHART
FIGURE 1-1

DESIGN FLOW SHEET
(DESIGN METHODS FOR SPDS REDESIGN)







PROCEDURE 2

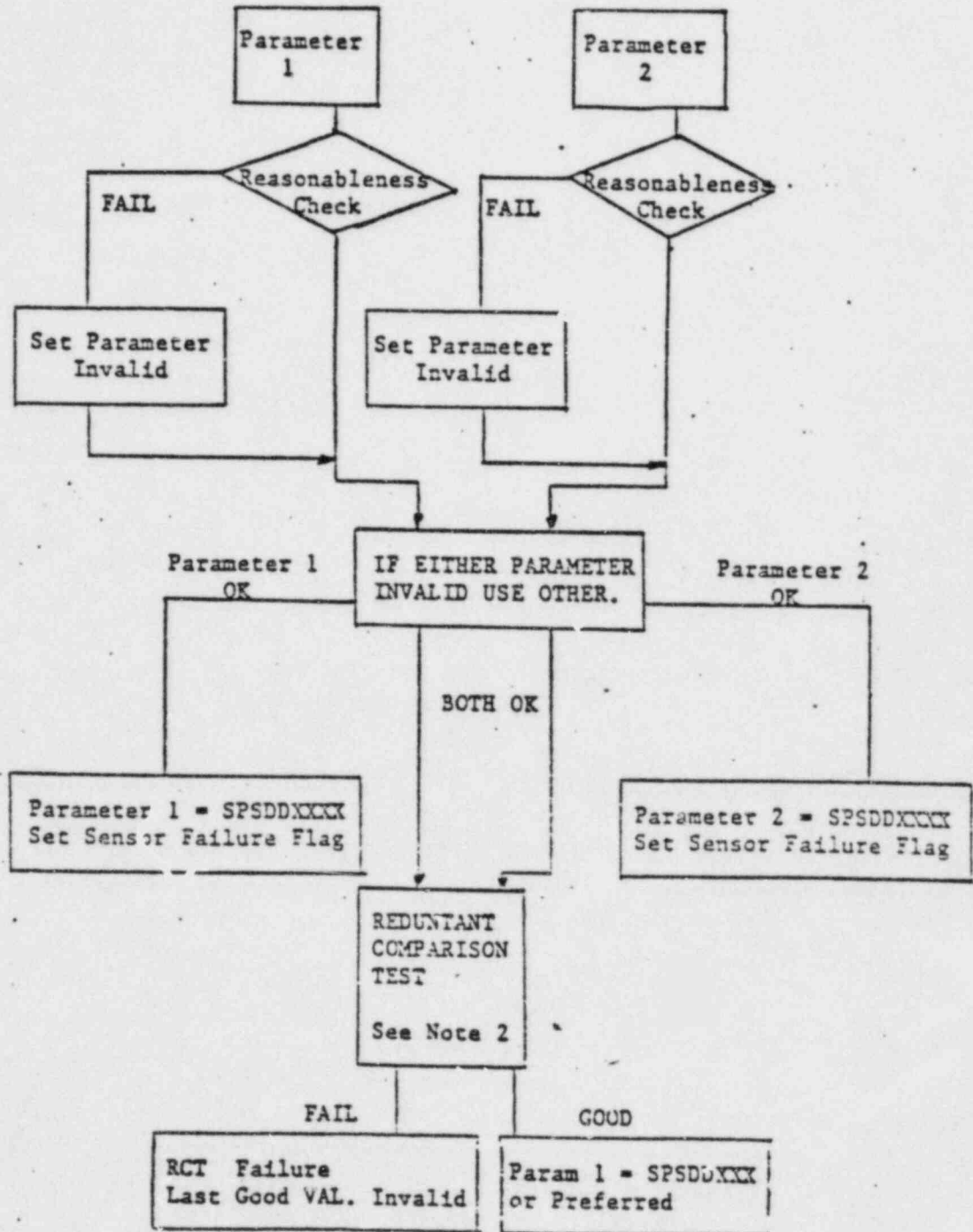
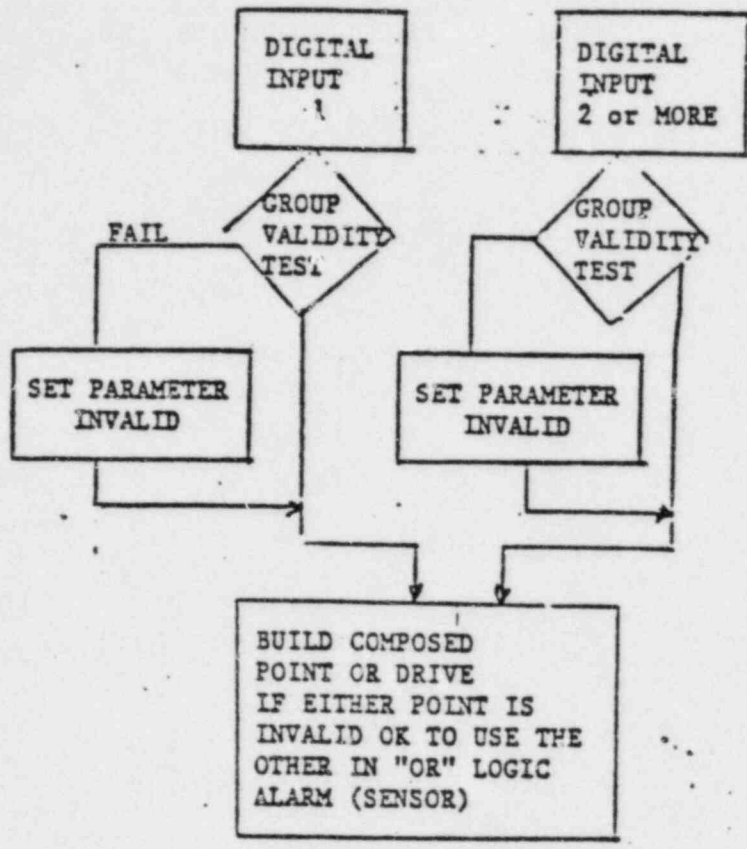


Figure 6-1
6-7



Proc 3
FIGURE 6-3

CSF INPUT PARAMETERS REQUIRING AVERAGING

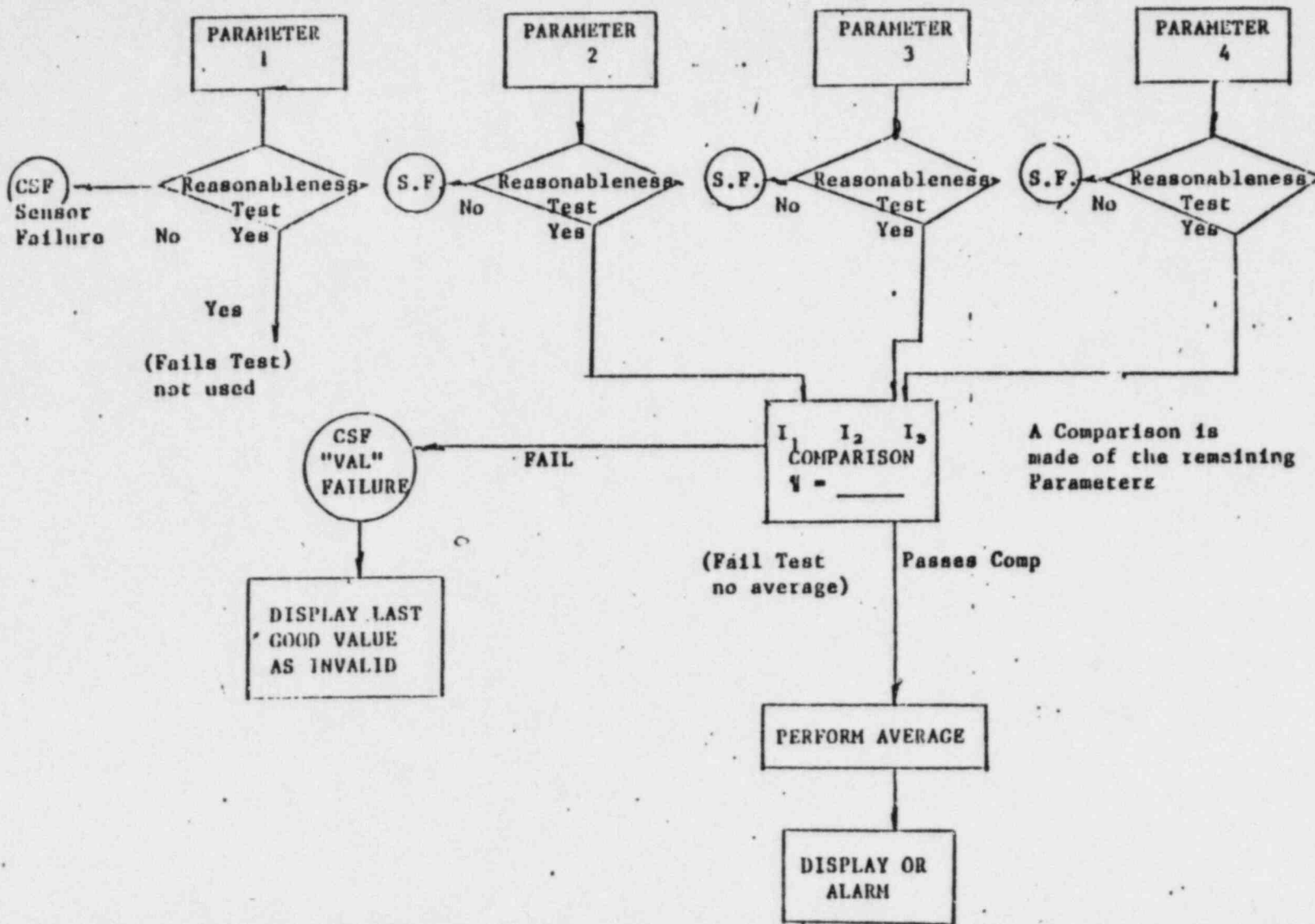


Figure 6-2

EVALUATION OF COLOR USE IN SPDS

- RELEVANT HUMAN FACTORS, OPERATIONAL, AND ENGINEERING CONSIDERATIONS
 - * COLORS AVAILABLE IN NUCLINET
 - * DISCRIMINABILITY AND LEGIBILITY OF COLORS
 - * REQUIREMENT TO DISPLAY DIFFERENT CATEGORIES OF INFORMATION
 - * COLOR DESIRABLE TO ENHANCE SPEED AND ACCURACY OF IDENTIFICATIONS
 - * STANDARD MEANINGS OF COLORS
 - * COMPATIBILITY OF COLOR CODING IN SPDS AND NUCLINET
 - * RESULTS OF CRT COLOR CODE STUDY PERFORMED BY TPT
 - * RESULTS OF SPDS/EOP INTEGRATED WALKTHROUGH
 - * ACCEPTED HF PRINCIPLES AND CAUTIONS REGARDING USE OF COLOR

- NUREG-0700

SPDS COLOR USE AND MEANING

- BLACK - DISPLAY BACKGROUND
- CYAN - STATIC DISPLAY ELEMENTS--LABELS, TABULAR LINES, BORDERS, PICTORIAL OUTLINES, CONVENTIONAL COMPONENT SYMBOLS INDEX FOR BAR GRAPH SCALES
- GREEN - DYNAMIC DATA: NORMAL--DIGITAL READOUTS, BAR GRAPHS: SUCCESSFUL COMPLETION OF OPERATIONS
- RED - DYNAMIC DATA: ALARM AND OPERATING CONDITIONS OUTSIDE NORMAL RANGE--DIGITAL READOUTS AND BAR GRAPHS
- WHITE - INVALID DATA

NRC COLOR CODING CONCERNS AND CPS SOLUTIONS

CONCERN	SOLUTION
1. CONSISTENCY WITHIN DISPLAYS	<ul style="list-style-type: none">• FOUR COLORS--EACH FOR A PARTICULAR CATEGORY OF INFORMATION.• CONSISTENT USE WITHIN AND BETWEEN DISPLAYS.• NUMERALS IDENTIFYING CONTAINMENT ISOLATION VALVE GROUPS ILLUMINATE GREEN ON SUCCESSFUL ISOLATION.
2. COLOR CODING STEROTYPES	<ul style="list-style-type: none">• COLOR CODE CONFORMS TO STEREOTYPICAL EXPECTATIONS AND TO HF DESIGN PRINCIPLES IN NUREG 0700 AND OTHER REFERENCES.
3. DISCRIMINABILITY OF COLORS	<ul style="list-style-type: none">• COLORS ARE EITHER EASILY DISCRIMINATED INTRINSICALLY OR AS RESULT OF REDUNDANT INFORMATION CODING TECHNIQUES.• YELLOW IS NO LONGER USED.• WHITE FOR INVALID DATA APPEARS IN A NORMALLY BLANK AREA AND HAS A SHAPE-CODED TAG.

COLOR CODING CONCERNS AND CPS SOLUTIONS
(CONTINUED)

CONCERN	SOLUTION
4. REDUNDANT CODING	USE OF: PICTORIAL REPRESENTATIONS STANDARD SYMBOLS FOR COMPONENTS COLOR CODING SHAPE CODING LOCATION CODING TEMPORAL CODING ALPHANUMERIC LABELS AND MESSAGES
5. RED COLOR CONTRAST	CRTs IN CONTROL ROOM WILL BE UPGRADED

SPDS SUMMARY DISPLAY
FORMAT AND CODING CONSIDERATIONS

- ° CSF STATUS BOXES

- ° DYNAMIC INFORMATION FOR 5 IMPORTANT PARAMETERS
NORMAL OPERATION
 - * CURRENT STATUS
 - HORIZONTAL BAR GRAPHS, ARRANGEMENT, RANGE,
ENTRY POINTS)

 - DIGITAL READOUT

 - * RATE OF CHANGE
 - DIGITAL READOUT

 - DIRECTION OF CHANGE (SHAPE AND LOCATION CODED
ARROWS AND "ZERO" READOUT)

CRITICAL SAFETY FUNCTION DISPLAYS
FORMAT AND CODING CONSIDERATIONS

- APPROPRIATE COMBINATION OF:
 - * PICTORIAL REPRESENTATION
 - * STANDARD COMPONENT SYMBOLS
 - * COLOR CODING
 - * SHAPE CODING
 - * ALPHANUMERIC LABELS AND MESSAGES

PICTORIAL REPRESENTATIONS

- ° SPATIAL ANALOGUE
 - * CLOSELY RELATED INFORMATION IN PROPER RELATIVE LOCATIONS
 - * DISPLAY ELEMENTS SPATIALLY ANALOGOUS TO REAL WORLD
 - * NO DISTORTION OF CRITICAL RELATIONS

- ° OUTLINE CONTOURS EASILY RECOGNIZED AS BOUNDARIES OF:
 - * REACTOR VESSEL
 - * DRYWELL
 - * CONTAINMENT
 - * SECONDARY CONTAINMENT
 - * FUEL BUILDING

PICTORIAL REPRESENTATION

- ° FACILITATE SPEED AND ACCURACY
 - * IDENTIFICATION OF CATEGORICALLY SIMILAR BUT SIGNIFICANTLY DIFFERENT INFORMATION (EXAMPLE-- REACTOR VESSEL PRESSURE, DRYWELL PRESSURE, CONTAINMENT PRESSURE)
 - * DISPLAY OF RELATED PARAMETERS IN A COMMON FRAMEWORK (EXAMPLE-- DRYWELL TEMPERATURE AND PRESSURE INSIDE THE CONTOURS REPRESENTING DRYWELL BOUNDARIES)

- ° FACILITATE IDENTIFICATION AND USE OF INFORMATION IN DECISION MAKING
 - * RELATIONAL CORRESPONDENCE BETWEEN
 - DISPLAY ELEMENTS
 - PHYSICAL REALITY
 - OPERATOR'S MENTAL MODEL OF PLANT

EVALUATION OF APPROPRIATENESS OF CODING TECHNIQUES

- COMPATIBILITY WITH THE INFORMATION TO BE CODED
- DISPLAY SPACE REQUIRED
- ASSOCIATION VALUE OF SYMBOLS
- EASE AND ACCURACY OF LEARNING AND USING CODE
- POSSIBLE INTERFERENCE WITH OTHER CODES
- AMOUNT OF INFORMATION TO BE CODED
- LIMITS OF THE CODE

CONTROL ROOM OPERATOR SURVEYS

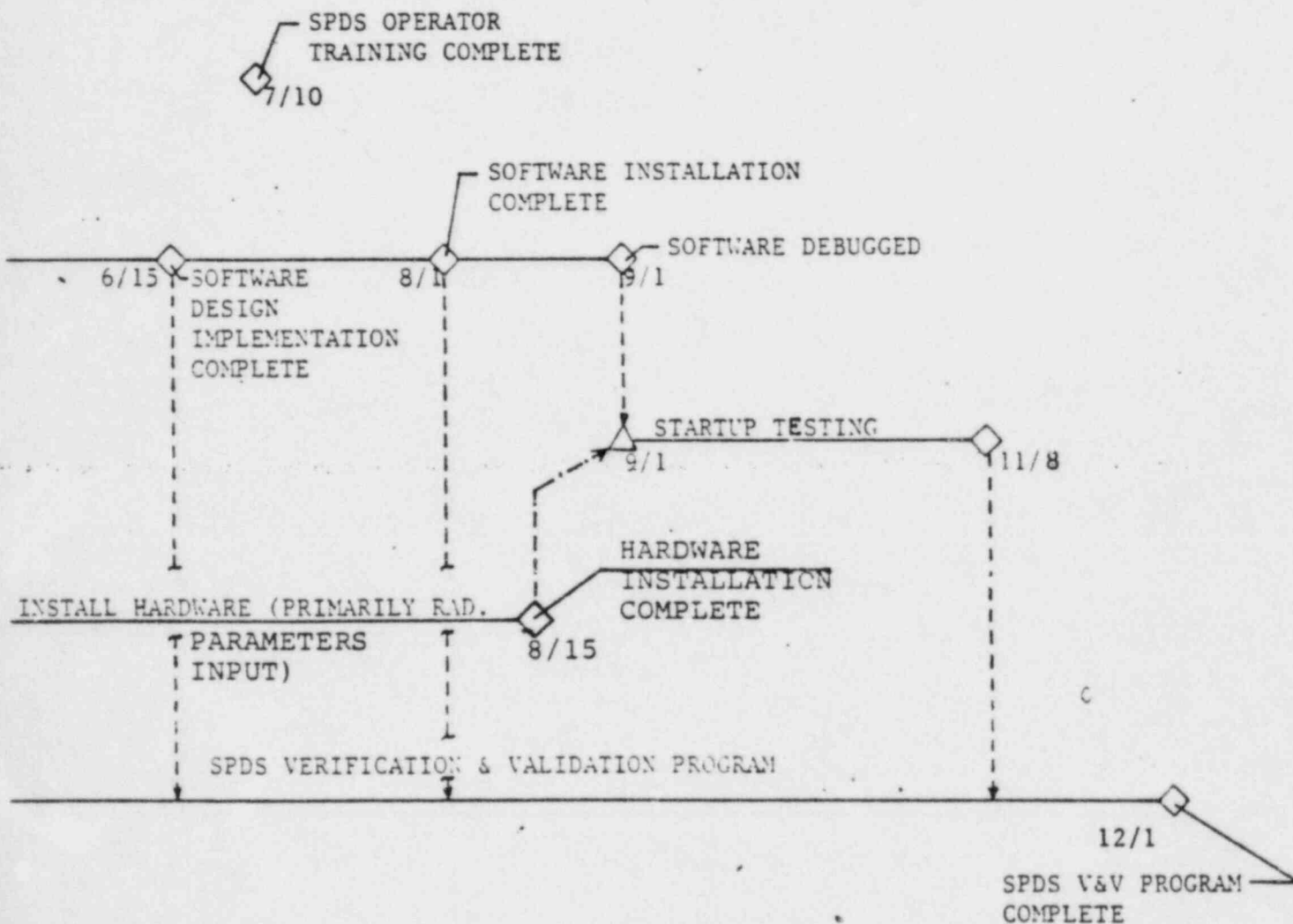
- DEVELOPED BY TORREY PINES TECHNOLOGY (DCRDR CONSULTANTS)
- PURPOSES:
 - * SOLICIT OPERATOR INFORMATION NEEDS
 - * OPERATOR DISPLAY FORMAT DESIGN INPUT
- QUESTIONNAIRE/SURVEY #1
 - REVIEW FSAR AND BEYOND DBA EVENTS
 - ESTABLISH AND PRIORITIZE REQUIRED CSFs
 - ESTABLISH AND PRIORITIZE REQUIRED PARAMETERS
 - RESULTS FAVORABLE
- QUESTIONNAIRE/SURVEY #2
 - FOLLOW-ON TO SPDS/EOP WALKTHROUGHS
 - EVALUATE PRELIMINARY DISPLAY FORMATS
 - REVIEW DATA RELIABILITY - CAN CSF REQUIREMENTS BE MET?
 - RESULTS FAVORABLE

SPDS/EOP OPERATOR WALKTHROUGHS

- ° PURPOSE: PARAMETER/DISPLAY FORMAT PRESENTATION V&V
- ° ACCIDENT SELECTION CRITERIA (SMALL LOCA, RAD RELEASE, ATWS)

 - * EXERCISE ALL EOPs
 - * BROAD RANGE OF PARAMETERS/CSFs AFFECTED
 - * EVALUATE INTERFACE WITH REST OF CONTROL ROOM
 - * FSAR CHAPTER #15 AND SEVERE ACCIDENTS EVALUATED
- ° WALK-TALKTHROUGH METHODOLOGY
 - * MULTIDISCIPLINARY REVIEW TEAM
 - * OPERATORS QUIZZED ON DISPLAY HUMAN FACTORS
- ° RESULTS:
 - * DISPLAY RECONFIGURATIONS
 - * RATE OF CHANGE INDICATIONS
 - * RPV WATER LEVEL - NEEDED ON ALL DISPLAYS
 - * STANDARD ABBREVIATIONS
 - * PARAMETER ARRANGEMENTS

SPDS IMPLEMENTATION SCHEDULE



NRC/IP PRESENTATION SUMMARY

- TOP DOWN DESIGN APPROACH
 - *DEVELOPED SOLID CRITERIA
 - *USED EXPERIENCED DESIGN TEAM
 - *APPROACH HAD BUILT IN REVIEWS/OPERATOR INPUTS
 - *HUMAN FACTORS PART OF DESIGN TEAM
- PARAMETER SECTION
 - *REVISED PARAMETER SET INCLUDING RADIATION INFORMATION
 - *EXPANDED DATA SET FOR REDUNDANCY
 - *EXPANDED CSF INPUTS
- FORMAT DESIGN
 - *TOP LEVEL DISPLAY WITH 3 SECONDARY
 - *EASY ACCESS TO SECONDARY DISPLAYS
 - *PICTORIAL REPRESENTATION
- LINE BY LINE ANSWER/SOLUTION TO NRC AUDIT CONCERNS
- A REDESIGN THAT CAN BE IMPLEMENTED WITHOUT MAJOR SCHEDULE IMPACT (WITH NRC GO-AHEAD)

NRC REVIEWS/AUDITS

- DESIGN VERIFICATION AUDIT REPORT IDENTIFIES -
 - * DESIGN VALIDATION AUDIT
 - REVIEW AS-BUILT PROTOTYPE OR INSTALLED SPDS
 - REVIEW RESULTS OF TESTING
 - EXHIBITS GOOD HUMAN FACTORS ENGINEERING PRACTICES
 - * INSTALLATION AUDIT
 - MAY BE REQUIRED
 - NRC RESIDENT INSPECTOR
 - ASCERTAIN IF SPDS INSTALLED IN ACCORDANCE WITH PLAN AND FUNCTIONING PROPERLY
- SPDS DESIGN CHANGE IMPLEMENTATION
 - * ITEMS COMPLETE TO SUPPORT NRC/FEMA PLAN EXERCISE
 - * NRC REVIEW REQUESTED PRIOR TO V&V COMPLETION
 - * INSTALLATION COMPLETE PRIOR TO FUEL LOAD - AUDIT, IF NEEDED, FOLLOWING THIS