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

[redacted]

NOTE TO: E. Weiss
D. Neighbors
J. Wilson
R. Bosnak
H. Rood
P. Moriette

FROM: D. Tarnoff, ORAB:DL

SUBJECT: OPERATING REACTORS EVENTS BRIEFING

The next NRR Operating Reactor Events Briefing is scheduled for Tuesday, July 16, 1985, at 3:00 p.m. in Conference Room P-422. Direct participants to the presentation will find guidelines in the enclosure. The tentative agenda for the meeting is shown below.

Plant	Subject	Presenter
Indian Point 3	Steam Generator Inspection Update	D. Neighbors
Seabrook	Crosby Relief Valve Problem	IE
Waterford	Plant Startup Experience	J. Wilson
Mojave	Steam Line Failure	R. Bosnak
Combustion Engineering	Re-evaluation of C-E Large Break LOCA Model	H. Rood
Paluel (France)	Internals Vibration Problems	P. Moriette

for Daniele Tarnoff, x29526

cc: G. Edison
R. Hernan
G. Holahan
E. Rossi
R. Baer
M. Srinivasan
B. D. Liaw
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B/32

ENCLOSURE

GUIDELINES FOR PRESENTERS

Each presenter should plan to attend the dry run, which is scheduled for Tuesday morning, July 16, at 10:00 a.m. in room 550. You should provide Daniele Tarnoff with your summaries no later than noon on July 15. It is imperative that the summary should be no longer than one page in the following format:

- Plant Name, captioned title, event date, presenter's name
- Plant status prior to or during the event (i.e., plant operating at full power; mode 5 for past 6 months)
- Safety significance and/or briefing significance (i.e., why are we presenting the event)
- Major points of the sequence of events and/or findings
- Licensee corrective action
- Generic implication
- NRC followup action

Some examples of briefing summaries and simplified diagrams are enclosed.

If you decide to have your summary typed, please make sure that one of the enclosed examples is used as a model for spacing, letter size, etc., and that the document name under which it is entered on the 5520 is telephoned to Debbie Miller (x27415).

The Office Director has specifically requested that summaries address fundamental issues of safety significance and generic applicability, and that the briefing for each event run no longer than 10 minutes, including a question or two. Your cooperation is appreciated.

GINNA - POST - LOCA CHARCOAL FILTERS POTENTIALLY INOPERABLE

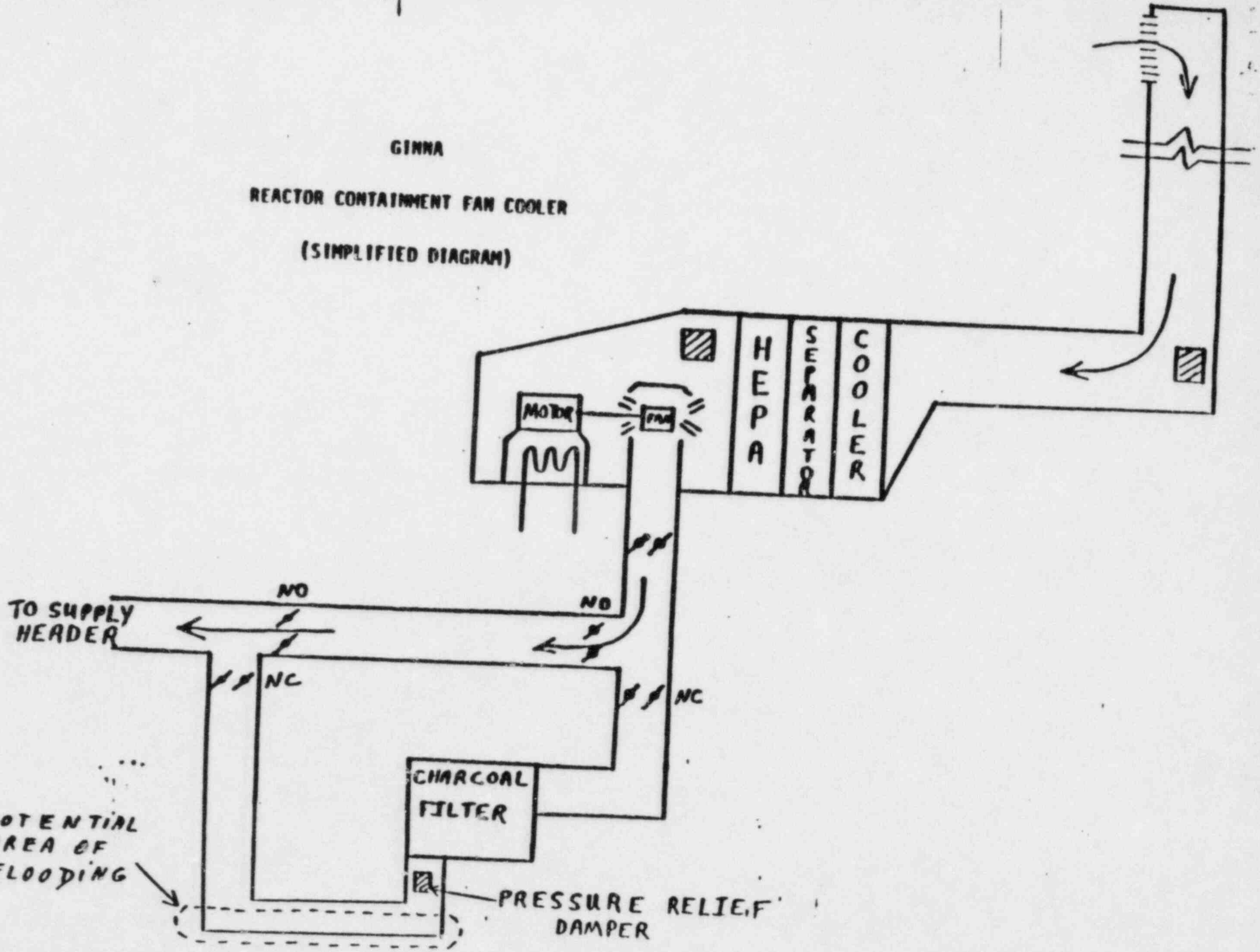
MAY 6, 1985 (W. SWENSON, NRR)

- PROBLEM - PORTIONS OF CHARCOAL FILTER DISCHARGE DUCTS MAY FLOOD FOLLOWING A LOCA
- SAFETY SIGNIFICANCE - POTENTIAL LOSS OF 2 OF 4 FAN COOLER UNITS AND BOTH CHARCOAL FILTERS UNDER ACCIDENT CONDITIONS.
- PROBLEM DISCOVERED BY LICENSEE ANALYSIS, VERIFIED BY CONTAINMENT ENTRY.
- DESIGN DEFICIENCY HAS EXISTED FOR LIFE OF PLANT.
- CORRECTIVE ACTIONS - OPEN MANWAY AND PIN OPEN PRESSURE RELIEF DAMPERS IN DISCHARGE DUCT. MODIFICATION OF DUCTWORK IS BEING CONSIDERED AS A PERMANENT FIX.
- MAY BE PROPOSED TO AEOD AS AN ABNORMAL OCCURRENCE OR "OTHER EVENT OF INTEREST."

GINNA

REACTOR CONTAINMENT FAN COOLER

(SIMPLIFIED DIAGRAM)



SURRY 2 - S/G WELD INDICATION-
MARCH 20, 1985 (DON NEIGHBORS)

- PLANT IN REFUELING STATUS
- WELD INSPECTION OF SG-A REVEALED SURFACE AND SUB-SURFACE INDICATIONS IN UPPER TRANSITION CONE GIRTH WELD.
- INDICATIONS APPEAR TO BE 1/8" DEEP FOR FULL CIRCUMFERENCE
- CORRECTIVE ACTION - GRIND OUT
- PARTIAL INSPECTION OF B & C STEAM GENERATORS SHOWS SOME SIMILAR INDICATION
- REG. II HAS INSPECTOR ON SITE

NOTE

- THIS APPEARS TO BE SIMILAR TO WELD CRACKS ON INDIAN POINT 3 STEAM GENERATOR UPPER SHELL TO TRANSITION CONE GIRTH WELD, THAT WERE IDENTIFIED IN MARCH 1982.
- IE NOTICE 82-37 ISSUED IN SEPTEMBER 1982
- IN RESPONSE TO IE NOTICE 82-37, SURRY 2 DETECTED POTENTIAL WELD PROBLEMS BY ULTRASONIC TESTS IN AUGUST 1983.

[redacted]

1:00 PM CALL TO CROSBY

JOE GREEN - S/A

DICK ZAHORSKY - CHIEF ENGR.

Guide ring

Seabrook - lift problem

Oconee 2 - excessive blowdown

OCONEE 2

990 ? RESEAT → 5.6% BLOWDOWN (NOT 990)

BUT DID HAVE EXTENDED BLOWDOWN ON OCONEE 1 — CROSBY WILL CHECK

SEABROOK 01-16-85 Letter from United Engrs.

3-7-85 Meeting with Utility, Teledyne, United Engrs.

Later tests at Wyle - May 21

One w/o disch. piping - inadequate lift also

Maybe full flow would be necessary

Change Crosby Guidelines? —

They will send —

B/33

[redacted]

Roland Huffman - Dresser - Nuclear Products

MSSV LIFT

- 150 VALVES TESTED AT WYLE - "R" ORIFICE
- NO LIFT PROBLEM WITH ANY RING SETTINGS
- BLOWDOWN IS MORE OF A PROBLEM

("R" is API designation)

• VALVES TESTED:

ARIZONA PUBLIC SERVICE PALO VERDE 1 & 2

DIABLO CANYON 1

CONSUMER POWER

OTHER IN STOCK VALVES AT DRESSER

ALL HAVE OPEN BONNET & NO BELLOWS

OPERATING REACTORS EVENTS BRIEFING (85-12)

[redacted]

INDIAN POINT UNIT 3 -	STEAM GENERATOR WELD INDICATIONS
SEABROOK -	MAIN STEAM SAFETY VALVE TEST FAILURE
OCONEE UNIT 2 -	EXTENDED BLOW DOWN FROM MAIN STEAM SAFETY VALVES
WATERFORD UNIT 3 -	PLANT TRIPS JULY 4-7, 1985
COMBUSTION ENGINEERING	LOCA ANALYSIS ERROR
MOJAVE GENERATING STATION -	REHEAT LINE FAILURE
PALUEL UNITS 1, 2 -	IN-CORE INSTRUMENTATION TUBE VIBRATION PROBLEMS
WATERFORD/WOLFCREEK - BYRON/CATAWBA	STARTUP EXPERIENCE COMPARISON

INDIAN POINT 3 - SG WELD INDICATIONS UPDATE

JULY 16, 1985 (~~DON~~ D. NEIGHBORS, NRR)

- PLANT IN REFUELING STATUS

- T.S. REQUIRES INSPECTIONS OF SG TRANSITION ZONE UPPER GIRTH WELDS

- INDICATIONS FOUND BY UT:

  SG 31 - 1
  SG 32 - 2
  SG 33 - 0
  SG 34 - 23

- SG-34 HAD WELD REPAIR IN 1983

- MT ON SG-34 SHOWED CLEAN ON 16 OF 23 INDICATIONS

- REMAINING 7 WELDS ON 34, AND 3 ON 31 AND 33 MAY NOT EXCEED CODE

- LICENSEE STILL INSPECTING AND EVALUATING

- MAY RESOLVE BY FRACTURE MECHANICS

- NRR HAS LEAD (SINCE 7/15/85)

- IE DEVELOPING INFORMATION NOTICE

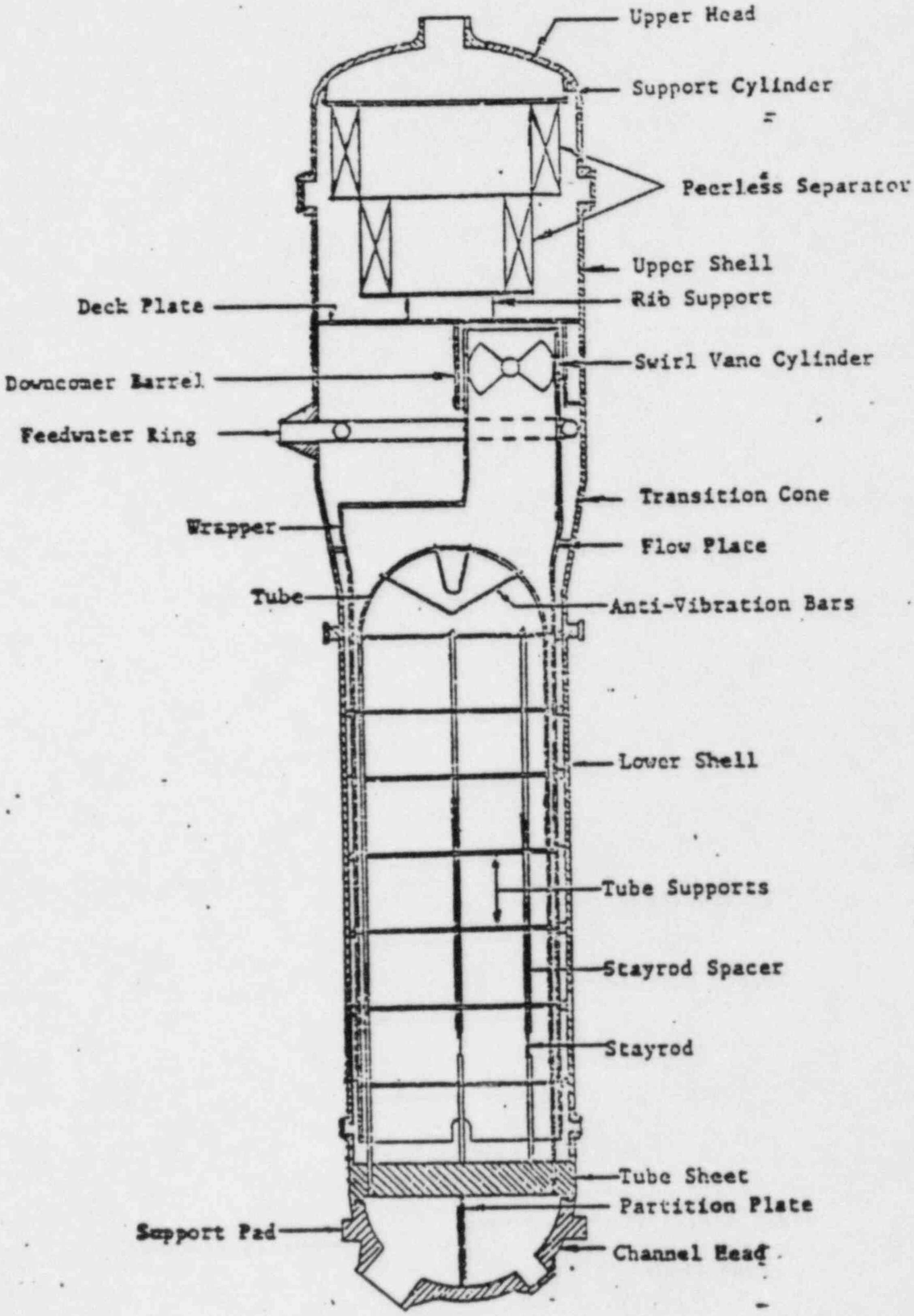


FIGURE 2.3-1
SERIES 51 STEAM GENERATOR

SEABROOK - CROSBY MAIN STEAM SAFETY VALVE
FLOW DEFICIENCY - DECEMBER 1984
(G. HAMMER, NRR)

- PROBLEM - FULL FLOW TEST RESULTS INDICATE SPRING-ACTUATED MAIN STEAM SAFETY VALVES MAY NOT ACHIEVE RATED FLOW CAPACITY.

- SAFETY SIGNIFICANCE - POSSIBLE INADEQUATE OVERPRESSURE PROTECTION OF SECONDARY ~~COOLING~~ SYSTEM IN PWRs USING THESE VALVES

- WYLE LABS TESTS RESULT: ~~IN~~ INADEQUATE LIFT OF VALVE DISK (ABOUT 50%) WITH THE VENDOR (CROSBY) RECOMMENDED RING SETTING ADJUSTMENTS. TESTS WERE CONDUCTED TO DETERMINE ADEQUACY OF DISCHARGE PIPING.

- CORRECTIVE ACTION - RINGS READJUSTED. OBTAINED FULL LIFT ON SEABROOK VALVES

- GENERIC IMPLICATION - SEABROOK VALVES AND DISCHARGE PIPING SIMILAR TO OTHER PWRs. FULL FLOW TESTS NOT NORMALLY RUN TO ADJUST RINGS.

- NRC FOLLOWUP ACTION: -
  (1) DEVELOPING IE INFORMATION NOTICE
  (2) STAFF MAY PURSUE AS A GENERIC ISSUE
  (3) DISCUSSIONS WITH CROSBY BY REGION 1 AND NRR REGARDING ADEQUACY OF VENDOR GUIDANCE AND SRV RING SETTINGS.

OCONEE 2 - EXTENDED BLOWDOWN FROM MAIN STEAM SAFETY VALVES

JULY 11, 1985 (H. NICOLARAS NRR)

- OCONEE UNIT 2 REACTOR TRIP FROM 94% POWER CAUSED BY PERSONNEL ERROR

- TWO MAIN STEAM SAFETY VALVES DID NOT RESEAT AT SETPOINT - EXTENDED BLOWDOWN - TO ABOUT 990 PSI

- TO RESEAT VALVES, OPERATORS REDUCED STEAM PRESSURE THROUGH TURBINE BYPASS VALVES.

- FAILURE OF CROSBY MAIN STEAM SAFETY VALVES TO PROPERLY RESEAT HAS ALSO REPEATEDLY OCCURRED AT OCONEE UNIT 1

- IMPROPER RING SETTING IS A LIKELY CAUSE OF EXCESS BLOWDOWN, BUT NOT CONFIRMED.

- DUKE POWER COMMITTED CORRECTIVE ACTIONS TO REGION II

- SUMMARY OF PLANTS REPORTING SIMILAR BLOWDOWN PROBLEMS IN LAST __ YEARS:

PLANT	KNOWN # OF EVENTS
OCONEE 1	7
OCONEE 2	1
TROJAN	1
SALEM	1

WATERFORD 3 - PLANT TRIPS JULY 4-7, 1985

(J. WILSON, NRR)

- WATERFORD 3 EXPERIENCED FOUR REACTOR TRIPS IN LESS THAN THREE DAYS
- DURING A PORTION OF THIS TIME, THE EFW TURBINE-DRIVEN PUMP WAS UNAVAILABLE DUE TO INADVERTENT BUMPING OF THE MECHANICAL OVERSPEED TRIP LATCH
- JULY 4 AT 0950 HOURS - 100% PWR - LOW LEVEL-HIGH VIBRATION ON "A" MAIN FEEDWATER PUMP
- JULY 4 AT 2217 HOURS - 6% PWR - CPC AUXILIARY TRIP ON AXIAL SHAPE INDEX - XE OSCILLATIONS
- JULY 5 AT 2219 HOURS - 60% PWR - HIGH SG LEVEL DUE TO OVERFEEDING SG WHILE IN MANUAL CONTROL WITH ONE MAIN FEEDWATER PUMP RUNNING
- JULY 6 AT 0915 HOURS - TERRY TURBINE OVERSPEED LATCH WAS FOUND TO BE TRIPPED
- JULY 7 AT 0121 HOURS - LOW SG LEVEL - LOSS OF MAIN FEEDWATER PUMPS ON LOW SUCTION WHILE AN OPERATOR WAS ATTEMPTING TO BACKWASH A CONDENSATE POLISHING SYSTEM FILTER
- LP&L CORRECTIVE ACTIONS:
  - REMOVING TRIP ON MAIN FEEDWATER PUMP VIBRATION - ALARM ONLY
  - REVISE OPERATING PROCEDURES
  - TRAINING, NIGHT ORDERS

CE LOCA ANALYSIS ERROR

JULY 2, 1985 (H. ROOD - NRR)

- NON-CONSERVATIVE ERROR FOUND IN CE LARGE-BREAK LOCA MODEL

- CENTER PEAK AXIAL POWER SHAPE YIELDS 34°F HIGHER PEAK CLAD TEMPERATURE (PCT) THAN PREVIOUSLY ASSUMED TOP-PEAKED SHAPE.

- FOR THREE CE PLANTS THAT ARE ON 1ST CYCLE THIS WOULD YIELD A PCT IN EXCESS OF THE 2200°F LIMIT OF 10 CFR 50.46. PLANTS ARE:

    PALO VERDE 1

    SAN ONOFRE 3

    WATERFORD 3

- BASED ON CE REANALYSIS, OTHER FACTORS IN LARGE-BREAK LOCA MODEL WILL REDUCE PCT TO BELOW 2200°F.

- LETTERS FROM THESE 3 LICENSEES BEING SUBMITTED GIVING BASIS FOR CONTINUED OPERATION.

- OTHER CE LICENSEES BEYOND CYCLE 1 AND (even when other factors not included) HIGHER PCT DOES NOT REACH 2200°F LIMIT. ?

MOHAVE GENERATING STATION - REHEAT LINE FAILURE

JULY 9, 1985 (R. BOSNAK, NRR)

- FAILURE OCCURRED JUNE 9, 1985 WHEN A 30" REHEAT LINE SUDDENLY SPLIT LONGITUDINALLY

  FRACTURE WAS FISH MOUTH RUPTURE APPROXIMATELY 20' x 6' FIG 1A &B

- SAFETY SIGNIFICANCE

  - FOSSIL PLANTS OF SIMILAR VINTAGE
  - NUCLEAR PLANTS

- 3a -

JUL 8 1985

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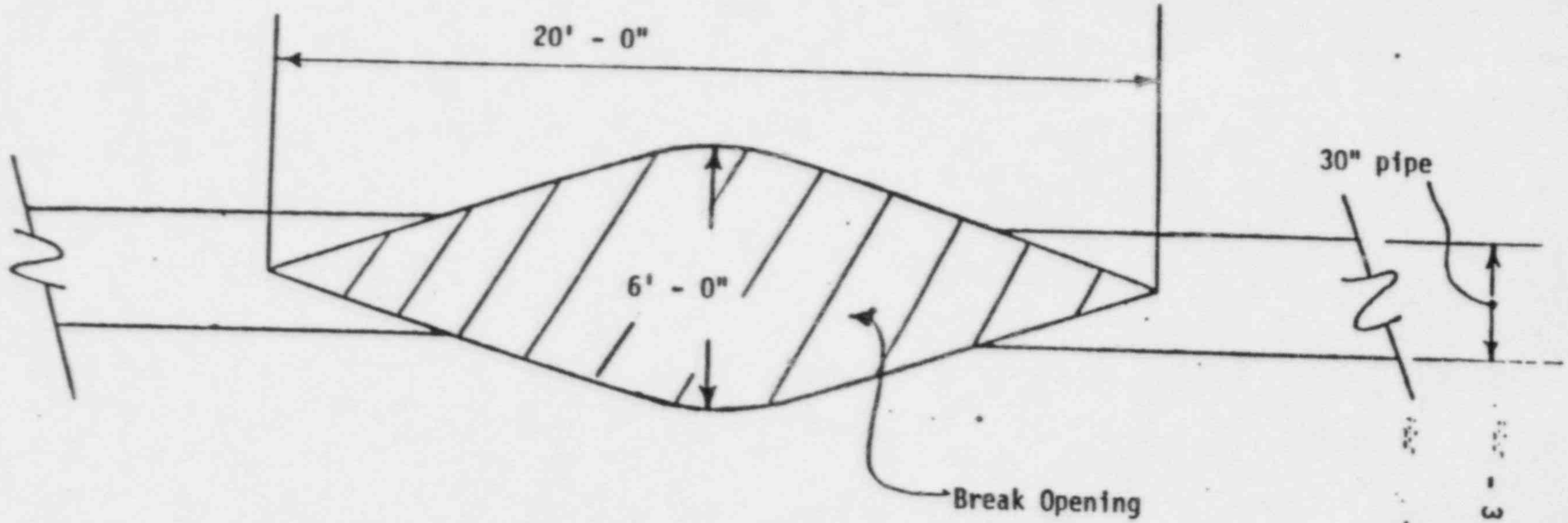

Figure 1 (A): Sketch of Mohave Pipe Rupture

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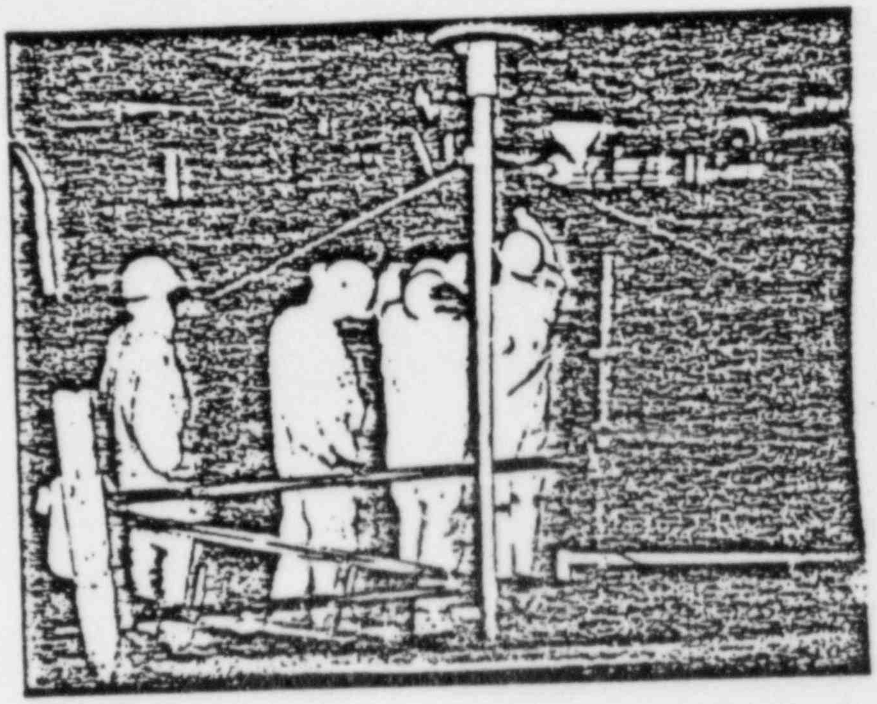

Figure 1 (b) Photo of Mohave Pipe Rupture

Suited persons are NRC Pipe Review Committee Members and Consultants

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REHEAT LINE - VITAL STATISTICS

- DESIGNED TO B31.1 CODE FOR STEAM CONDITIONS OF 1000°F AND 600 PSIG

- CONSTRUCTION LATE 1960's COMMENCED OPERATION 1971

- FAILURE IN A HORIZONTAL SPOOL 30"-DIAMETER ROLLED AND WELDED OF A-378C PLATE (1 1/4 CR-1/2 MO) TO MEET A-155 WELDED PIPE

COMPARISON WITH LWR PIPING

- MATERIAL NOT USUALLY USED IN LWR

- ~~UPPER TEMPERATURE NOT IN LWR~~

- UPPER TEMPERATURE NOT IN CREEP RUPTURE AND CREEP FATIGUE RANGE IN LWR

- FABRICATION CONTROLS INCLUDING NDE SUPERIOR IN LWR

- LEAK DETECTION REQUIREMENTS IN LWR

- INSERVICE INSPECTION IN LWR

FAILURE ANALYSIS

- RESULTS EXPECTED FROM SCE BY EARLY AUGUST

PALUEL 1 & 2. IN-CORE INSTRUMENTATION TUBE VIBRATION PROBLEMS
MARCH 29, 1985 (P. MORIETTE, NRR)

- INITIAL EVENT: MARCH 29, 1985. PALUEL 1 IN COLD SHUTDOWN.
- LEAK DETECTED ON ONE THIMBLE TUBE, WHILE LEAK TESTING IN-CORE INSTRUMENTATION SYSTEM.
- SUBSEQUENT FINDINGS:

  APRIL 5: MECHANICAL WEAR (WITHOUT LEAK) ON 4 OTHER THIMBLES.

  APRIL 16: A PROBE CANNOT BE COMPLETELY INSERTED IN ONE THIMBLE (PALUEL 1).

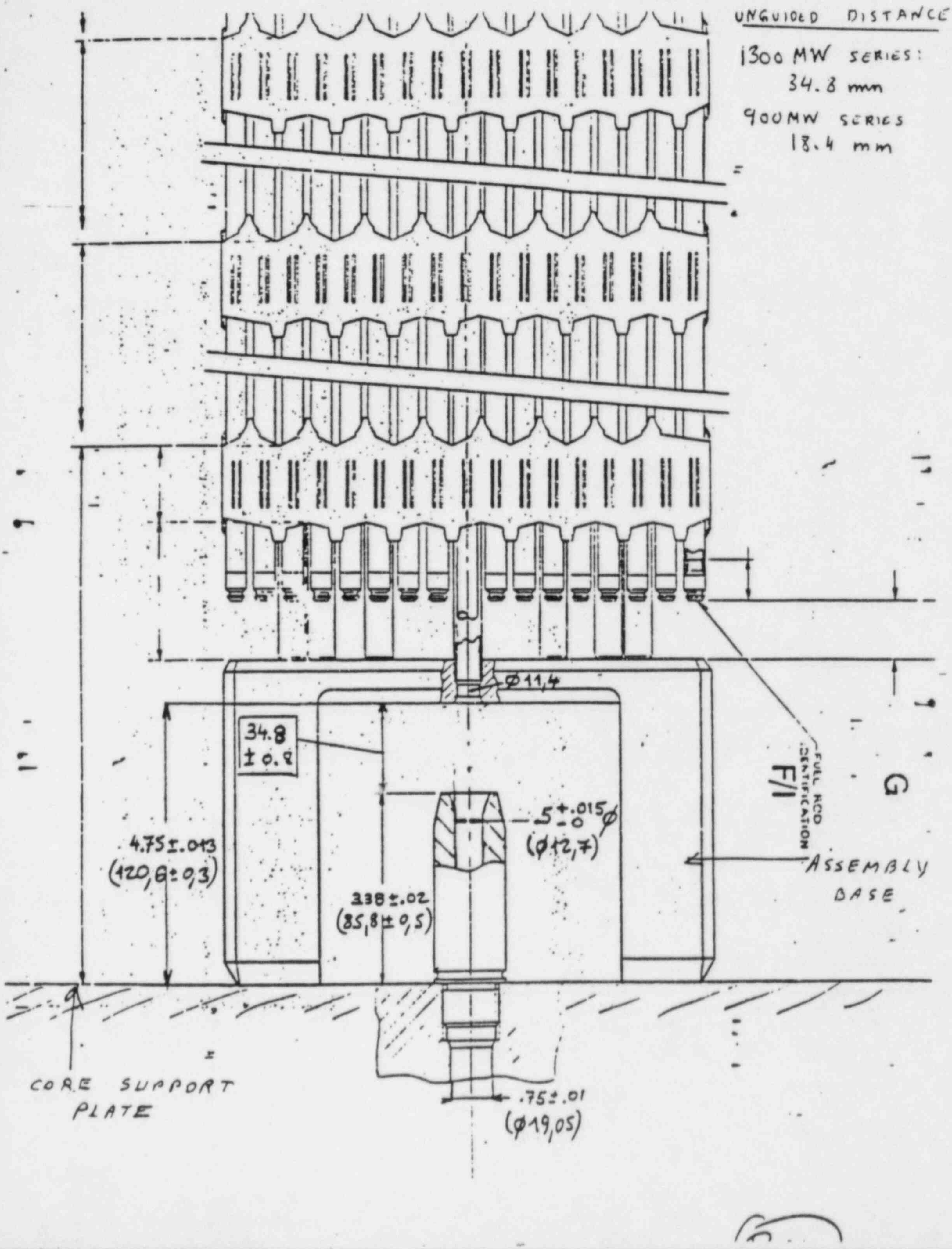
  MAY-JUNE: 2 LEAKS ON PALUEL 2, ANOTHER LEAK ON PALUEL 1
- SAFETY SIGNIFICANCE: REACTOR COOLANT LEAKS, OR: NO FLUX MAPS. POSSIBILITY OF MIGRANT OBJECTS.
- MAJOR POINTS:
  - DEFECTS (OR LEAKS) LOCATED AT DISCONTINUITY IN GUIDING STRUCTURE
  - CAUSE THOUGHT TO BE HYDRAULIC EXCITATION DUE TO TURBULENCE~~S~~ IN THE CORE SUPPORT PLATE - BOTTOM OF FUEL ASSEMBLY REGION.
  - DIFFERENCES (FROM 900MWe SERIES) IN LOWER INTERNALS DESIGN AND MEASURED FLOW PARAMETERS SUPPORT THIS HYPOTHESIS.
  - LOWER INTERNALS <u>W</u> DESIGN. CORE INSTRUMENTATION SYSTEM (OUTSIDE VESSEL) FRAMATOM~~E~~ DESIGN.
- GENERIC IMPLICATIONS: ALL 1300MWE SERIES REACTORS AFFECTED IN FRANCE

- LICENSEE CORRECTIVE ACTIONS:

  SHORT TERM: JUSTIFY OPERATION J~~USTIFY OPERATI~~ON WITHOUT IN-CORE INSTRUMENTATION FOR 1 1/2 MONTH.

  LONG TERM: MODIFY THIMBLE GUIDING PIECES ON TOP OF CORE SUPPORT PLATE FOR BETTER PROTECTION, REDUCE TURBULENT FLOW AROUND THIMBLES.

- ONLY AFFECTED US FACILITY: SOUTH TEXAS PROJECT 1 & 2


UNGUIDED DISTANCE
1300 MW SERIES:
34.8 mm
900MW SERIES
18.4 mm
Ø11,4
34.8
±0.8
.5 +.015 -0 Ø
(Ø12,7)
4.75±.013
(120,6±0,3)
.338±.02
(85,8±0,5)
FULL RCO IDENTIFICATION
F/I
G
ASSEMBLY
BASE
CORE SUPPORT
PLATE
.75±.01
(Ø19,05)

UNPLANNED REACTOR TRIPS*

- AVERAGE WEEKLY TRIP FREQUENCY FOR PAST 6 WEEKS IS APPROXIMATELY 10 TRIPS/WEEK, WHICH IS NEAR AVERAGE

- BREAKDOWN OF REPORTED CAUSES

  AUTOMATIC

  - EQUIPMENT FAILURES 46%
  - PERSONNEL ACTIVITIES 46%

  MANUAL 8%

*BASED ON 10 CFR 50.72 REPORTS FOR PLANTS WITH LICENSES FOR FULL POWER OPERATION