



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V

1450 MARIA LANE, SUITE 210
WALNUT CREEK, CALIFORNIA 94596

SEP 20 1985

Docket No. 50-528
License No. NPF-41

CONFIRMATORY ACTION LETTER

Arizona Nuclear Power Project
Post Office Box 52034
Phoenix, Arizona 85072-2034

Attention: Mr. E. E. Van Brunt, Jr.
Executive Vice President

Subject: Return of Palo Verde 1 to Power Operations from Current Outage

Gentlemen:

In my letter to you of September 17, 1985, I confirmed Arizona Nuclear Power Project's (ANPP) agreement that prior to restart of the Unit from its current shutdown, you would ensure that the issue of appropriate design criteria for the auxiliary spray system was resolved to the satisfaction of the NRC staff.

By letter dated September 18, 1985, you discussed the unscheduled shutdown of September 12, 1985 and briefly addressed NRC concerns relating to the auxiliary spray system and interfacing equipment. In response to these concerns, you proposed certain short term compensatory measures for continued operation of the facility.

In a meeting with the NRC staff on September 20, 1985, you provided a more in-depth description of the September 12, 1985 event, including the sequence of events, design characteristics of the auxiliary spray system, and a further discussion of the short term compensatory measures for continued operation. At the conclusion of the meeting, Mr. J. Haynes, Vice President for Nuclear Production, ANPP, committed to the following short term compensatory measures:

- (1) Monitor the reference leg of the volume control tank level indicator on a daily basis. If the data obtained justify a less frequent monitoring interval, ANPP may propose a different interval to the NRC staff.
- (2) Revise the appropriate procedures to require alignment of the refueling water tank to charging pump suction promptly on loss of offsite power.
- (3) Institute procedural cautions on restart of the charging pumps.

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PDR FOIA
GARDE85-696 PDR

cf

- (4) Examine the post-trip review process in light of the September 12, 1985 event to assure that off-normal events are adequately evaluated, particularly with respect to their potential safety significance.
- (5) Examine the process for vendor reviews of the remaining power ascension tests to assure that, for equipment particularly sensitive to the test being conducted, appropriate vendor input has been provided in the test development.
- (6) Review the shift complement for the remaining power ascension tests to determine if additional staffing may be appropriate.

On the basis of the above commitments, we are satisfied that adequate short-term compensatory measures are in place for restart of the Unit from its current shutdown. Long term measures to assure the continued reliability of the auxiliary spray system will be the subject of future correspondence.

If our understanding concerning the above measures is not correct, you should promptly notify this office in writing.



J. B. Martin
Regional Administrator

Distribution:

Standard

J. Axelrad, IE

J. Lieberman, OELD ✓

ANPP/NRC MEETING TO DISCUSS
PVNGS AUXILIARY SPRAY CAPABILITY AND
THE STARTUP TESTING EVENT OF SEPTEMBER 12, 1985

- | | | |
|------|--|---|
| I. | INTRODUCTION | J. G. HAYNES
V. P. - NUCLEAR PRODUCTION |
| II. | SEPTEMBER 12, 1985 EVENT | 1) R. E. GOUGE
UNIT 1 DAY SHIFT SUPV.
2) D. D. SWAN
UNIT 1 ASST. SHIFT SUPV. |
| III. | AUXILIARY SPRAY DESIGN/
LICENSING COMMITMENTS | T. F. QUAN
LICENSING SUPERVISOR |
| IV. | EVENT EVALUATION | T. F. QUAN |
| V. | CONCLUSION | J. G. HAYNES
V. P. - NUCLEAR PRODUCTION |

CONDITIONS PRIOR TO EVENT OF 9-12-85

1. REACTOR AT 53% FULL POWER
2. TURBINE GENERATOR ONLINE AT 585 MWe
3. PREPARING FOR 50% LOSS OF LOAD TEST

PURPOSE OF 50% LOSS OF LOAD TEST:

1. DEMONSTRATE THAT THE PLANT CAN ACCOMMODATE
A LOAD REJECTION FROM 50% POWER
2. VERIFY THAT THE TRANSIENT DID NOT INITIATE
A REACTOR POWER CUTBACK

SEQUENCE OF EVENTS

- 2208 TEST INITIATED BY REMOTE MANUAL OPENING OF BOTH GENERATOR OUTPUT BREAKERS, (TURBINE-GENERATOR FLUCTUATIONS)
- 2209 REACTOR TRIP (FLOW-PROJECTED DNBR TRIP FROM CPC)
- 2209 TURBINE TRIP (CAUSED BY REACTOR TRIP)
- 2215 NON-SAFETY RELATED AUXILIARY FEEDWATER PUMP STARTED
- 2217 ATMOSPHERIC DUMP VALVES (ONE ON EACH STEAM GENERATOR) OPENED 3%
- 2218 MAIN STEAMLINE DRAINS AUTOMATICALLY REOPENED UPON RESTORATION ON NON-1E ELECTRICAL POWER
- 2222 SIAS AND CIAS INITIATED (1837 psia; 540⁰ F)
SIAS AND CIAS ACTUATIONS WERE VERIFIED AS PER DESIGN WITH HPSI INJECTING APPROXIMATELY 75 GPM TO EACH COLD LEG
- 2223 NOTIFICATION OF UNUSUAL EVENT DECLARED DUE TO COMPLICATED REACTOR TRIP AND INITIATION OF A SIAS
- 2225 AUXILIARY OPERATOR RE-ENERGIZED MOTOR CONTROL CENTER NHN-M-72 UNDER CONTROL ROOM DIRECTION (RE-ENERGIZED CHN UV-501, VCT OUTLET AND UV-536, RWT HIGH SUCTION TO CHARGING PUMPS.)

SEQUENCE OF EVENTS (CONT.)

2237 CHARGING HEADER LOW FLOW ALARM (40 GPM)
INTERMITTANT CHARGING HEADER PRESSURE ALARMS

FOR THE NEXT 43 MINUTES, OPERATORS WERE
ATTEMPTING TO REESTABLISH CHARGING PUMP
SUCTION FROM:

- (1) RWT HIGH SUCTION VIA CH UV 536
- (2) RWT LOW SUCTION VIA CHN V 327
- (3) RWT HIGH SUCTION VIA UV 532 -- BAMP
CH 514 TO THE CHARGING PUMPS (AFTER
NON-1E POWER RESTORATION)

2320 REESTABLISHED CHARGING FLOW WITH TWO CHARGING
PUMPS INJECTING 44 GPM TO RCS

2358 RESET SIAS AND CIAS (RCS PRESSURE AND INVENTORY
STABLE AND UNDER CONTROL)

0102 9/13/85 TERMINATION OF NOTIFICATION OF UNUSUAL
EVENT

CHRONOLOGY OF AUXILIARY SPRAY

DESIGN/LICENSING CRITERIA

LONG-TERM COOLDOWN

PRE RSB5-1 ORIGINAL DESIGN

1978 RSB5-1 ISSUED, SYSTEM UPGRADED TO MEET CLASS 2 PLANT REQUIREMENTS -- REDUNDANT AUX SPRAY VALVE

2ND QTR, 1981

Q440.6 SUBMITTED BY THE NRC ON CESSAR/ PVNGS DOCKETS

description of depress capability very safety related system & brief copy was safety related system

10/8/81

CESSAR RESPONSE TO Q440.6 SUBMITTAL

described active caposed credit for and PVNG

10/29/81

CESSAR COMMITS TO UPGRADE CH-141 AND

CH-501 *require valves for up from condenser & engage to be generated from vital bus*

11/3/82

APR etc

"SAFETY GRADE AUXILIARY SPRAY SYSTEM"

if PORVs not to be installed to this function are safety related & the long term cooldown

7/28/83

response to 6-2

- "SAFETY-RELATED METHOD FOR RAPID DEPRESSURIZATION ... CONSISTENT WITH THE RECOMMENDATIONS OF [RSB5-1]

still context of long term cooldown

- STATED CEN-239 APPLICABLE TO PVNGS

- SUBMITTED CEN-239, SUPPLEMENT 3

Chig's system - Qual 80% screened - PRA - input in less of coolant and better regulation

CHRONOLOGY OF AUXILIARY SPRAY (CONT.)

SHORT-TERM
MITIGATION

4/27/84

- NRC LETTER REQUIRING ANALYSIS ASSUMING FULL OPEN ADV FAILURE

in this case scenario asked to model of actions

9/1/84

- PLANT-SPECIFIC SGTR + LOP + FAILED ADV ANALYSIS SUBMITTED

analysis submitted -
Notes

*- staff approved
concern of A Division
analytical response
was
requested assume
values not
open more than
10% or
reverse
analysis
is
acc for
full open
in this
response
that*

ORIGINAL AUXILIARY SPRAY CRITERIA

OPERATOR CONTROL OF THE RCS PRESSURE DURING
FINAL STAGES OF COOLDOWN (WHEN PRESSURE LESS THAN
REQUIRED FOR RCP) AND FOR COOLDOWN OF PRESSURIZER.

CURRENT AUXILIARY SPRAY CRITERIA

SAFETY GRADE PLANT COOLDOWN CONSISTENT WITH
THE GUIDANCE OF BTP RSB 5-1. FOR CLASS 2 PLANTS:

- o OPERATOR ACTIONS OUTSIDE CONTROL ROOM *are adjusted for suitable failure*
- o OPERATOR ACTIONS INSIDE CONTAINMENT
AFTER SSE
- o REMAINING AT HOT STANDBY UNTIL MANUAL
ACTIONS OR REPAIRS ARE COMPLETED.

AUX SPRAY SYSTEM

ACTIVE COMPONENTS

SPRAY VALVES

LOOP ISOLATION VALVES

CHARGING PUMPS (*safety grade*)

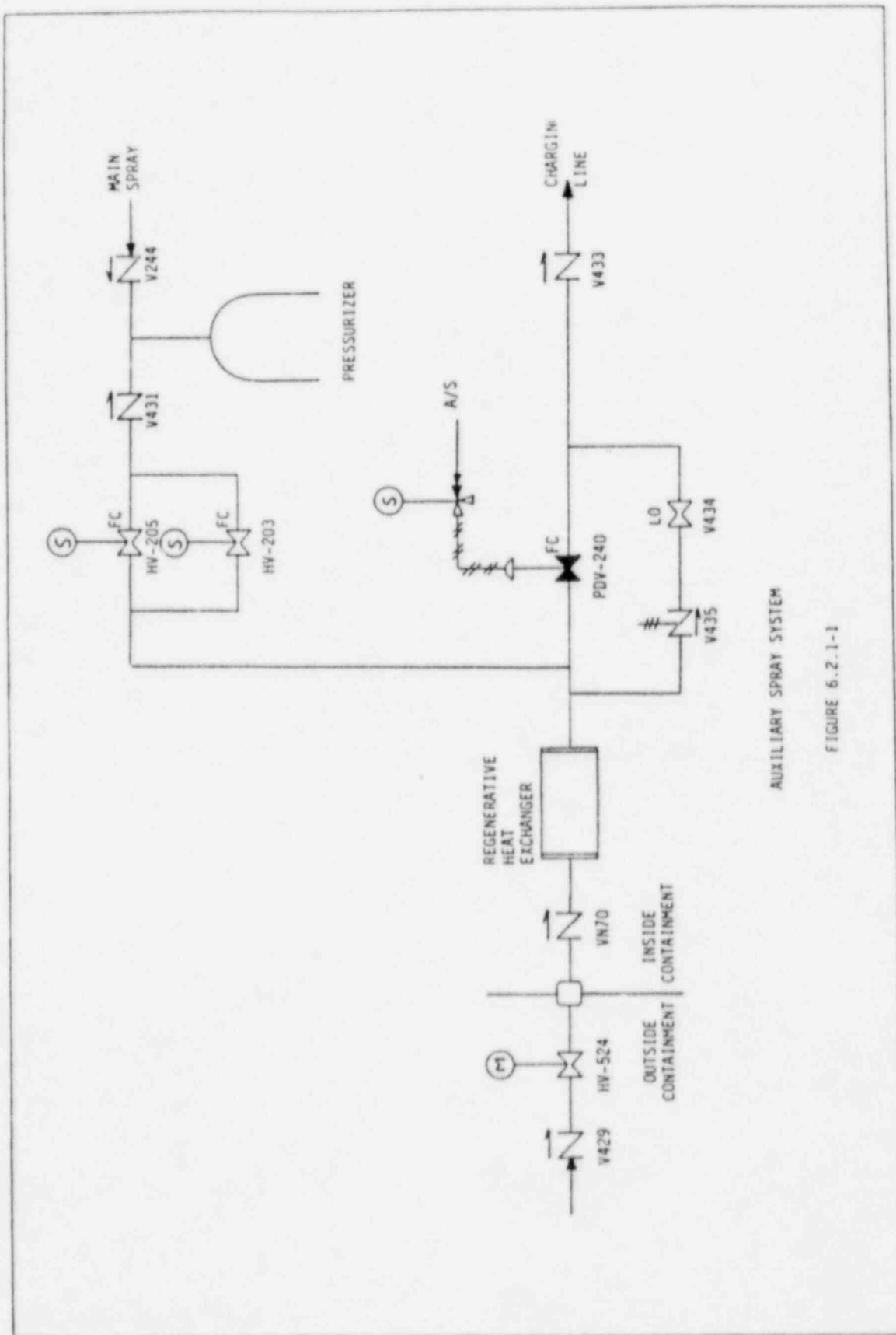
DETAILED DESCRIPTION IN RESPONSE TO 440.6

*why was some of water
not identified*

AUX SPRAY SYSTEM

CESSAR vs PVNGS

- o PVNGS HAS REMOVED INTERNALS FROM
MAIN SPRAY BACKFLOW CHECK VALVE
- o PVNGS HAS MODELED AUX SPRAY IN
TRANSIENT ANALYSIS OF CERTAIN SG
TUBE RUPTURE TRANSIENTS



AUXILIARY SPRAY SYSTEM

FIGURE 6.2.1-1

AUX SPRAY USE IN

SAFETY ANALYSES

- DURING LONG-TERM COOLDOWN PHASE FOLLOWING
EVENT: *at 2 hr phase*

CESSAR-E

PVNGS-FSAR (ORIGINAL)

ALL WITH LOP

ALL WITH LOP

- DURING SHORT-TERM MITIGATION
PHASE OF EVENT:

CESSAR-E

PVNGS-FSAR (AMEND 14)

NONE

SGTR/LOP/FULL OPEN

FAILED ADV

*even if this
failure - not
accidents
criteria*

*Chubby 5 analysis -
didn't take in
credit for
didn't assume
that would
affect coming event*

PVNGS-FSAR (APPENDIX 15A)

SGTR ANALYSIS RESULTS

<u>EVENT</u>	<u>TIME</u> (SECONDS)	<u>FSAR</u> <u>THYROID DOSE</u> (REM)	<u>ESTIMATED*</u> <u>THYROID DOSE</u> (REM)
SGTR & STUCK OPEN ADV	0	0	0
LOP	51	0	0
AFAS (INTACT/AFFECTED)	122/132	0	0
ADV OPENS	460	0	0
MSIS	513		
SIAS	581		
AFW OVERRIDE	655		
AUX SPRAY	1015	115	115*
TUBES RECOVERED	1385	182	186*
2 HR DOSE @ EAB	7200	200	210*

*ESTIMATED DOSE BASED ON REMOVAL OF EFFECT OF AUX SPRAY FLOW.
(REGULATORY DOSE LIMIT 300 REM)

EVENT EVALUATION

ITEM 1 - LOSS OF VCT LEVEL

COMPENSATORY MEASURES - MONITOR REFERENCE LEG WATER LEVEL

- instructions to of* - ALIGN REFUELING WATER TANK TO CHARGING PUMP SUCTION PROMPTLY ON LOSS OF POWER *from control room before SMS*
- INSTITUTE PROCEDURAL CAUTIONS ON RESTART OF CHARGING PUMPS

ITEM 2 - LOSS OF POWER TO CVCS VALVES (501, 536)

COMPENSATORY MEASURE - ALIGN REFUELING WATER TANK TO CHARGING PUMP SUCTION PROMPTLY ON LOSS OF POWER

GOVERNMENT ACCOUNTABILITY PROJECT

1555 Connecticut Avenue, N.W., Suite 202
Washington, D.C. 20036

(202) 232-8550

October 10, 1985

FREEDOM OF INFORMATION ACT REQUEST

Director
Office of Administration
Nuclear Regulatory Commission
Washington, D.C. 20555

FREEDOM OF INFORMATION
ACT REQUEST

FOIA -85-696
Rec'd 10-15-85

To Whom It May Concern:

Pursuant to the Freedom of Information Act ("FOIA"), 5 U.S.C. §552, the Government Accountability Project ("GAP") requests copies of any and all agency records and information, including but not limited to notes, letters, memoranda, drafts, minutes, diaries, logs, calendars, tapes, transcripts, summaries, interview reports, procedures, instructions, engineering analyses, drawings, files, graphs, charts, maps, photographs, agreements, handwritten notes, studies, data sheets, notebooks, books, telephone messages, computations, voice recordings, computer runoffs, any other data compilations, interim and/or final reports, status reports, and any and all other records relevant to and/or generated in connection with the loss-of-load test incident discussed in the October 2, 1985 letter to Mr. E.E. Van Brunt, Jr., Executive Vice President of Arizona Nuclear Power Project from Hugh L. Thompson, Jr., Director of the Licensing Division of the Office of Nuclear Reactor Regulation. This includes all documents from the time of the incident itself, on September 12, 1985.

This request includes all agency records as defined in 10 C.F.R. §9.3a(b) and the NRC Manual, Appendix 0211, Parts 1.A.2 and A.3 (approved October 8, 1980) whether they currently exist in the NRC official, "working", investigative or other files, or at any other location, including private residences.

If any records as defined in 10 C.F.R. §9.3a(b) and the NRC Manual, supra, and covered by this request have been destroyed and/or removed after this request, please provide all surrounding records, including but not limited to a list of all records which have been or are destroyed and/or removed, a description of the action(s) taken relevant to, generated in connection with, and/or issued in order to implement the action(s).

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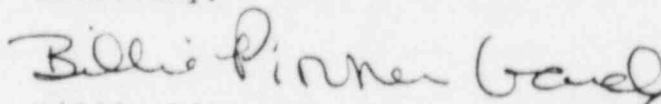
GAP requests that fees be waived, because "finding the information can be considered as primarily benefitting the general public," 5 U.S.C. §552(a)(4)(a). GAP is a non-profit, non-partisan public interest organization concerned with honest and open government. Through public outreach, the Project promotes whistleblowers as agents of government accountability. Through its Citizens Clinic, GAP offers assistance to local public interest and citizens groups seeking to ensure the health and safety of their communities. The Citizens Clinic is currently assisting several citizens groups, local governments and intervenors in Arizona concerning the construction of the Palo Verde nuclear power plant.

We are requesting the above information as part of an ongoing monitoring project on the adequacy of Region V and the NRC's efforts to protect public safety and health at nuclear power plants.

For any documents or portions that you deny due to a specific FOIA exemption, please provide an index itemizing and describing the documents or portions of documents withheld. The index should provide a detailed justification of your grounds for claiming each exemption, explaining why each exemption is relevant to the document or portion of the document withheld. This index is required under Vaughn v. Rosen (I), 484 F.2d 820 (D.C. Cir. 1973), cert. denied, 415 U.S. 977 (1974).

We look forward to your response to this request within ten days.

Sincerely,



Billie Pirner Garde
Director, Citizens Clinic