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SUBJECT: LER 90-009-00:on 900604,inappropriate operator actions to control & maintain mim level in EFW inventory tank.
W/9 ltr.

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RIDS/ADDS

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DUKE POWER

July 3, 1990

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
LER 269/90-09

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report (LER) 269/90-09 concerning inappropriate operator actions to control and maintain minimum level in the Emergency Feedwater Inventory Tank which resulted in a Technical Specification violation.

This report is being submitted in accordance with 10 CFR 50.73 (a)(2)(i)(B). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

H. B. Barron
Station Manager

/ftr

Attachment

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NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Oconee Nuclear Station, Unit 1	0 5 0 0 0 2 6 9	1 OF 1 3

TITLE (4) Inappropriate Operator Actions to Control and Maintain Minimum Level in Emergency Feedwater Inventory Tank Resulted in a Technical Specification Violation

EVENT DATE (5)			LER NUMBER (6)					REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR		SEQUENTIAL NUMBER		REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
												0 5 0 0 0
0 6	0 4	9 0	9 0	–	0 0 9	–	0 0	0 7	0 3	9 0		0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	– 0 –	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Henry R. Lowery, Chairman Oconee Safety Review Group	8 0 3 8 8 5 – 3 0 3 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On June 4, 1990, at approximately 0909 hours, a Technical Specification violation occurred during Unit 1 start-up activities while at hot shutdown conditions. During attempts to de-oxygenate the Feedwater (FDW), so that final FDW would meet Chemistry specifications for feeding the steam generators, the Upper Surge Tank (UST) was not controlled at a level of six feet or greater as required to provide an adequate water source for the Emergency Feedwater Pumps. The situation, which led to this violation, developed over a period of 1.5 hours and was caused by Operator actions that were directed at lowering the water temperature in the UST during clean-up operations. Operator actions to monitor level and control makeup to the UST during their efforts to reduce the temperature and comply with a new temperature limit were not adequate. Also, proper response to computer alarms was nct made. Immediate corrective actions to line-up sufficient makeup to the UST were delayed due to a misplaced procedure, but by 0950 hours, were effective in restoring required tank level. The root cause of this event is classified as Inappropriate Action, no action taken when required, because the need was not recognized. Two contributing causes, Management Deficiency, poor management interface and Defective Procedure, incomplete information are also assigned to this incident.

BACKGROUND

One of the Condensate/Feedwater System's [EIIS:SD/SJ] major purposes is to purify the Feedwater so it meets Chemistry specifications for feeding the steam generators [EIIS:SG]. During unit startup activities several methods of Feedwater (FDW) cleanup can be used. During the event described in this report, FDW with a high oxygen content was being circulated from the Hotwell [EIIS:SQ] to the Upper Surge Tank (UST). This mode of cleanup, when aided by addition of steam from the auxiliary steam header [EIIS:SA] to the "E" heaters, elevates the temperature of the FDW and causes the oxygen to be driven out of solution. Normally, a flow of approximately 2500 to 3000 gpm is circulated between the Hotwell and the UST. The UST temperature can be increased up to 185 degrees Fahrenheit (F) to more efficiently remove the oxygen. However if the UST temperature reaches 190 degrees F, procedure instructions state that the Emergency Feedwater pumps [EIIS:P] must be declared inoperable.

The UST, a component of the Condensate System and also the normal suction source to the Emergency Feedwater System (EFWS) [EIIS:BA], is located in the turbine building [EIIS:NM] and consists of two 36,000 gallon tanks. Input sprays into the UST dome for deaeration purposes and the tank contents are maintained at 27 inches of vacuum. Inputs and supplies to and from the UST are:

INPUTS:	SUPPLIES:
Demineralizer water makeup	Hotwell level control makeup
Condensate cleanup	Emergency Feedwater Pump suction
Feedwater cleanup	Auxiliary Boiler
	Polishing Demineralizer Backwash pumps
	Misc. Valve and Pump Seals

In the event the Feedwater System becomes inoperable, the EFWS (Attachment 1) assures the capability to remove decay heat and cool down the Reactor Coolant System [EIIS:AB]. Technical Specification (TS) 3.4.4 states the following: "A minimum of 72,000 gallons of water per operating unit shall be available in the upper surge tank, condensate storage tank, and hotwell. A minimum of 6 ft. (=30,000 GAL.) shall be available in the upper surge tank."

The "E" Heaters are two "U" tube heat exchangers [EIIS:HX] also located in the turbine building. Condensate flows through the tubes and steam is supplied to the shell side of the heat exchangers. During the heat transfer process, Condensate/Feedwater temperature is increased. In the event described, auxiliary steam from Unit 3 (a unit operating at 100% Full Power) was being supplied to the Unit 1 "E" Heaters.

The Condensate Storage Tank (CST) [EIIS:KA], located in the basement of the turbine building, is a 30,000 gallon tank that receives and collects overflows from the UST, various drains, and other Units' CST when cross-connected. Two CST transfer pumps are available to pump contents to the UST or to another Units' CST.

EVENT DESCRIPTION

On April 25, 1990, a Technical Specification (TS) revision was approved to TS 3.4.4 to raise the required minimum Upper Surge Tank (UST) level from 5 feet to 6 feet. The new limit of 6 feet included an allowance for instrument error and for the depletion of inventory while switching to an alternate Emergency Feedwater System (EFWS) suction source.

On June 2, 1990, a change applicable to subcritical conditions only was made to procedure PT/1/A/600/01 "Periodic Instrument Surveillance." This change was initiated to permit a higher temperature limit in the Upper Surge Tank (UST) during feedwater cleanup operations (feedwater circulated from the Hotwell to the UST for oxygen removal purposes). The temperature limit of the UST for EFWS operability was set at 190 degrees Fahrenheit (F). The procedure change was made only after Design Engineering (DE) performed calculations to ensure that the Emergency Feedwater pumps were capable of discharging the required flow at the elevated temperature without experiencing net positive suction head problems. DE also ensured that the EFWS would be capable of decay heat removal using the hotter water.

With startup activities in progress at hot shutdown conditions, Unit 1 Operations personnel, after receiving a turnover between 0630 and 0700 hours on June 4, 1990, were continuing to clean-up Feedwater (approximately 14 ppb oxygen at the time). The "E" Heaters were being supplied steam from Unit 3 (operating at 100% Full Power). To maintain mass balance in Unit 3's condensate inventory, condensate from Unit 1 Condensate Storage Tank (CST) was being transferred to the Unit 3 CST. Steam generator chemistry cleanup was also in progress with flow returning to the Hotwell. The Feedwater Pump Seal Injection Sump pumps were supplying water to the Unit 1 CST at a rate of approximately 300 gpm.

At approximately 0730 hours, Control Room Operator (CRO) "A", noted that the Upper Surge Tank (UST) was at approximately 185 degrees Fahrenheit (F) He realized this temperature was at the limit specified in the procedure. After discussing this fact with Control Room Operator (CRO) "B", a decision was made to throttle back the steam supply controller that was delivering approximately 1.8E5 pounds mass/hour (lbm/hr) to the "E" Heaters. This input to the condensate system was a large volume contributor to the Hotwell and therefore Unit 1 condensate inventory.

CRO "A's" first adjustment to the controller at approximately 0745 hours had no significant effect on the UST temperature. At approximately 0815 hours, he made a second adjustment to the controller. CRO "A" stated that after each adjustment, he informed CRO "B" of his actions and then returned to another task.

CRO "B" was manning the control board during this time, therefore CRO "A" believed that he was monitoring the UST. By this time, 0815 hours, the UST water level had dropped slightly (approximately 2") but had not been detected by either of the operators. The UST temperature reading, which was being watched intermittently by CRO "A", had not yet indicated the desired reduction. Upon recognizing this fact, at approximately 0830 hours, CRO "A" made a third adjustment to cut back the "E" heater steam. This action was taken without monitoring the UST level. CRO "A" again stated he notified CRO "B" of the adjustment. This third and final adjustment resulted in a significant steam flow reduction to the "E" Heaters. The controller, after the final adjustment, had been cut back to a setting of approximately 3.0E4 lbm/hr. This reduction in steam resulted in a decrease of approximately 300 gpm of input to the Hotwell. A temperature reduction of approximately 30 degrees F in the UST also followed.

At approximately 0850 hours, Unit 3 CROs telephoned and informed Unit 1 CRO "A" that the Unit 3 CST was overflowing. To terminate the overflow condition, CRO "A" secured both CST pumps. At 0903 hours, a Unit 1 CST high level computer alarm was received in the control room. CRO "B", upon receipt of this alarm, asked CRO "A" if he had done anything which may have caused the high CST level. CRO "A" informed him that he had secured the CST pumps.

At approximately 0909 hours, a low Condensate alarm was received on the UST indicating the level had dropped to 7 feet. This alarm went unrecognized.

At approximately 0914 hours, as CRO "B" continued to monitor the CST level on the alarm video, he noticed that the UST level was also in alarm. He then monitored the UST level instrumentation and observed that the level had dropped to 5.85 feet which was less than the Technical Specification (TS) requirement of 6 feet. CRO "B" announced the level problem to the other Operators and immediate action was taken by CRO "A" to initiate Demineralizer Water (DW) [EIIS:KC] makeup to the UST. CRO "A" notified CRO "B" of his action.

The addition of DW makeup (a very small makeup capability) was not sufficient to overcome the losses in the UST. The UST level continued to drop rapidly despite makeup while the CST level during the same time frame increased at a similar rate. Between approximately 0919 and 0932 hours,

the Unit 1 CST overflowed to the Turbine Building Sump. However CRO "A" and "B" did not realize this reduction in condensate inventory was occurring.

During this time, Operators were taking action to manually re-align the Unit 1 CST to the Unit 1 UST in order to provide sufficient makeup to the UST. They experienced problems in locating and completing the working copy of the procedure that had been used to set-up the earlier alignment for transfer between Unit 1 and Unit 3 CSTs. This problem delayed Operator actions for a short period of time. At approximately 0930 hours, the new line-up was completed which allowed the restart of the CST pumps. The lowest level reached in the UST was 3.85 feet.

By 0950 hours, the UST had been restored to a level greater than the six feet TS requirement. The UST low level alarm cleared at approximately 0958 hours signifying a level of seven feet in the tank. Makeup continued until the level was greater than ten feet and then normal level control measures were resumed.

CONCLUSION:

To properly understand how the Upper Surge Tank (UST) condition (level below six feet) occurred, one must first review the occurrence with a great deal of understanding of the overall dynamic systems being operated to cleanup the Feedwater. To enhance this understanding, Attachment 2 is provided and displays a flow diagram of the system in use. Attachment 3 provides chart recorder data reflecting the tank level with respect to the overall time of the event.

CRO "A" was keenly aware of the new procedure requirement to maintain UST temperature below 185 degrees F and that above 190 degrees F the Emergency Feedwater Pumps would have to be declared inoperable. With his main effort focused on reducing the UST temperature, he did not realize (possibly due to his involvement with other concurrent tasks) how his adjustments to the "E" Heater steam flow would effect level in the Hotwell. This steam flow reduction was directly responsible for a net flow reduction to the Hotwell of approximately 300 gpm.

CRO "B" was positioned to observe the control board, therefore, CRO "A" thought CRO "B" was monitoring the UST situation even though this understanding had not been communicated between the individuals. CRO "B" stated that he did not consciously acknowledge the low level alarm on the UST at the seven foot level but that, he may have possibly acknowledged it along with other simultaneous alarms. Failure to recognize the need to provide adequate makeup to the UST resulted in a significant system imbalance which allowed the water to be drained from the UST to the

Hotwell by the automatic operation of the Hotwell level control valve (C-187). Actions to provide makeup should have been taken parallel with steam flow reduction measures. The root cause of this event is classified as Inappropriate Action, no action taken when required by either CRO "A" or CRO "B" because the need was not recognized to provide adequate makeup to the UST during the time steam was being reduced to the Hotwell.

In April 1990, when Technical Specification (TS) 3.4.4 was changed to increase the minimum UST level to six feet, no additional actions were taken by Operations management personnel to place special emphasis on the new required level. Actions could have been taken to raise the setpoint from the current seven foot level to one of a higher level. Management did review the need to change the setpoint but elected not to do so to prevent nuisance alarms. Management will re-evaluate this item with respect to this incident. Actions to raise the alarm level would give the operator additional time to respond to any future UST low level alarms.

Operations supervision and/or staff personnel were available and could have assisted the Operators if they had been requested or otherwise directly involved with the problem. The UST high temperature problem and subsequent actions that followed to lower temperature developed over approximately 1.5 hours which offered sufficient time for discussion and interface with other available personnel.

Many opportunities were available for assistance to be given to the Operators. First, the SRO (Senior Reactor Operator) was stationed in the control room during this event but did not get directly involved with the problem. Second, the Unit supervisor was in and out of the control room during this event but did not lend any personal attention to the problem. Thirdly, Operations staff personnel, who were responsible for the procedure change and also involved with the TS revision, could have provided the operator with guidance and pertinent precautions and barriers to prevent this system imbalance problem. Therefore, a contributing cause of Management Deficiency, poor management interface, is assigned to this event.

No procedure guidance was available (other than the proper valve line-up requirements) to assist the operators in "how to" balance and control the condensate recirculation loops. This evolution is left to the licensed Operator and he is expected to utilize operator abilities that have been developed through experience and training to control the situation. Additional procedure instructions, if they had been available, would have assisted the Operators and could have possibly prevented this incident. Therefore, an additional contributing cause of Defective Procedure, incomplete information is assigned.

Based on a review of incidents occurring over the last twenty-four months, this event is classified as non-recurring. No equipment or component failures/malfunctions occurred during this incident. Therefore, it is not NPRDS reportable. There were no radioactive releases, radiation exposures, or personnel injuries resulting from this event.

CORRECTIVE ACTIONS:

Immediate:

1. Operators terminated the event by adding makeup to the Upper Surge Tank (UST) from the Demineralized water system and the Condensate Storage Tank.

Subsequent:

1. Appropriate counseling has been conducted with all personnel involved with identified inappropriate actions.

2. Design Engineering personnel, responsible for design of the involved systems and for the calculations related to the new elevated UST temperatures, re-evaluated the system dynamics to ensure no unidentified problems existed.

Planned:

1. Training will be given to all licensed operators to enhance their ability to monitor and control condensate inventory when operating in the feedwater cleanup mode of operation.

2. Operations procedures will be revised to provide better guidance when operating in the feedwater cleanup mode of operation. The problems described with controlling condensate inventory will be addressed.

3. Upper Surge Tank low level computer alarm setpoint will be reviewed for adequate margin.

SAFETY ANALYSIS:

In this event, the established Technical Specification (TS) criteria on the Unit 1 Upper Surge Tank (UST), in regard to its capability to supply sufficient inventory to the Emergency Feedwater System (EFWS), was significantly compromised (requirement-minimum level 6 feet versus the actual lowest level during event of 3.85 feet). However, in terms of

overall unit/plant safety, this incident is considered insignificant.

As required by TS 3.4.4, each unit's UST is to be maintained at a level greater than six feet. This requirement has been established to ensure that the EFWS (see attachment 1) for each unit will have a sufficient feedwater supply to furnish the steam generators in the event of loss of the Condensate/Main Feedwater system. The purpose of the EFWS is to remove energy stored in the core and primary coolant by providing a heat sink to enable cooldown to cold shutdown conditions from a reactor trip at power operation. The EFWS may also be required in some other circumstances such as cooldown following a loss-of-coolant accident for a small break.

Discussion is provided in FSAR, section 10, on each of the following transients:

- Loss of Main Feedwater (LMFW)
- LMFW with Loss of Offsite AC Power
- LMFW with Loss of Onsite and Offsite AC Power
- Plant Cooldown
- Turbine Trip
- Main Steam Isolation Valve Closure
- Main Feedwater Line Break
- Steam Line Break
- Small Break LOCA

The above transients bound the EFWS performance requirements for all transients. The assumptions utilized in the analysis of the plant response allow conservatism for margins of realistic system performance.

FSAR 10.4.7 states that the plant transient which requires the highest EFWS flow, and as such constitutes the design basis transient, is the loss of main feedwater transient. Both the turbine [EIIS:TA] and reactor [EIIS:RCT] trip on loss of the main feedwater pumps. This transient combines the highest heat load, decay heat plus reactor coolant pump heat, with the minimum heat sink due to the instantaneous loss of both main feedwater pumps.

The Condensate/Feedwater reserves for each unit are normally aligned to the EFW pump suctions. The maintained reserves for each unit are:

SOURCE	MAX. CAPACITY
Upper Surge Tank A	36,000 gallons/unit
Upper Surge Tank B	36,000 gallons/unit
Condenser Hotwell	142,000 gallons/unit
Condensate Storage Tank	30,000 gallons/unit
Makeup Demineralizers	450 gallons/minute (Total capacity, with 225 gpm in service and 225 gpm in reserve)

Note: Additional Condensate Feedwater may also be provided from condensate sources associated with the other 2 Oconee units.

Assuming the unlikely possibility that the EFWS had been needed during the period of low level in the Unit 1 UST (approximately 40 minutes), feedwater inventory would have been adequately supplied to the EFW pumps without any known delay. This determination is based on the following facts:

First, even though the level was low (under the required limit), more than 19,000 gallons of feedwater remained in the tank even at its lowest level of 3.85 feet. With the exception of only about 20 minutes, there existed at least an additional 5000 to 10,000 gallons in the tank. The contents of the tank (even though reduced amounts at times) were always available and could have been automatically utilized as per design.

Secondly, in the worst case design basis transient applicable to this event, only 94,000 gallons are needed to cool the reactor coolant at a rate of 100 degrees F/hour; 145,000 gallons are needed at a cooldown rate of 50 degrees F/hour; and for cooldown in the recirculation mode, the minimum amount of water in one units upper surge tank, condensate storage tank, and hotwell is the amount needed for 11 hours of operation per unit. In the first two possible modes of cooldown, adequate reserves were always available during this event from Unit 1's hotwell and upper surge tank inventory without considering other sources. If the recirculation mode of cooldown had been used or needed, alternate EFW supplies were available from the other Unit 1 sources as well as sources on the other two units (ONS 2 and 3).

In addition other alternatives were also available:

The hotwell and condensate booster pump combination has discharge shutoff head of approximately 550 psia. Two sets of three pumps are provided. If required, the Turbine Bypass System could have been used to reduce secondary system pressure to the point where a hotwell and condensate booster pump combination can supply feedwater to both steam generators.

The Auxiliary Service Water System [EIIS:KW] may be used to maintain steam generator water inventory following steam generator depressurization to remove decay heat in the long term.

The Safe Shutdown Facility Auxiliary Service Water System is capable of supplying both steam generators of all three units at full secondary system pressure.

A sufficient depth of backup measures is provided to allow steam generator water inventory to be maintained by any of the diverse methods listed above. Although redundancy and diversity is provided in the listed measures, the EFWS has been designed with special considerations to enable it to function when conventional means of feedwater makeup may be unavailable.

A Technical Specification limit was exceeded during this event. However, no safety systems were challenged or otherwise affected. No radioactive material releases, personnel radiation exposures, or personnel injuries occurred. The health and safety of the public was not affected by this event.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

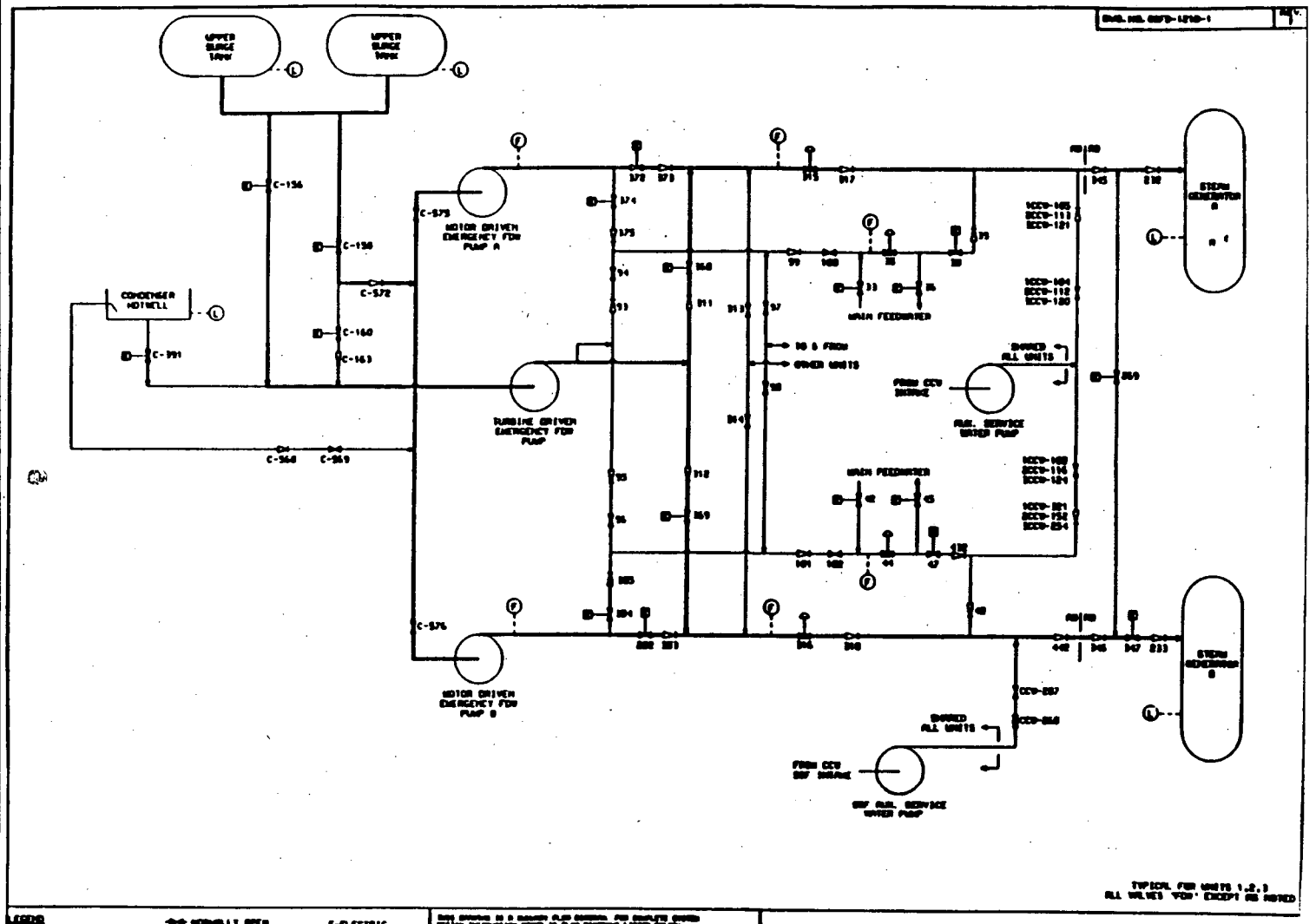
APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Oconee Nuclear Station, Unit 1	0 5 0 0 0 2 6 9	9 0	— 0 0 9	— 0 0	1 1 OF 1 3

TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

ATTACHMENT 1



LEGEND
- BACKUP VALVE
- FLOW CONTROL VALVE
- CHECK VALVE (ALL TYPES)
- RELIEF VALVE
- NORMALLY OPEN
- NORMALLY CLOSED
- NORMALLY THROTTLED
- F-FLOW, L-LEVEL, P-PRESSURE, T-TEMPERATURE
- E-ELECTRIC, H-HYDRAULIC, P-PISTON, S-SOLENOID, PNEUMATIC
- (ES)-RECEIVES ENGINEERED SAFEGUARD SIGNAL

CFD-1210A	-1.7, 2.7, 3.7	UPPER SURGE TANKS
	-1.6, 2.6, 3.6	CONDENSER HOTWELL
CFD-1210B	-1.9, 2.9, 3.9	MAIN FEEDWATER
CFD-1210	-1.5, 2.5, 3.5	EMERGENCY FEEDWATER
	-1.8 (SHARED)	AUX. SERVICE WATER
CFD-113A	-2.5 (SHARED)	SSF AUX. SERVICE WATER

FLOW DIAGRAM OF EMERGENCY FEEDWATER SYSTEM OCONEE NUCLEAR STATION

Figure 10.4-4
1987 Update

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
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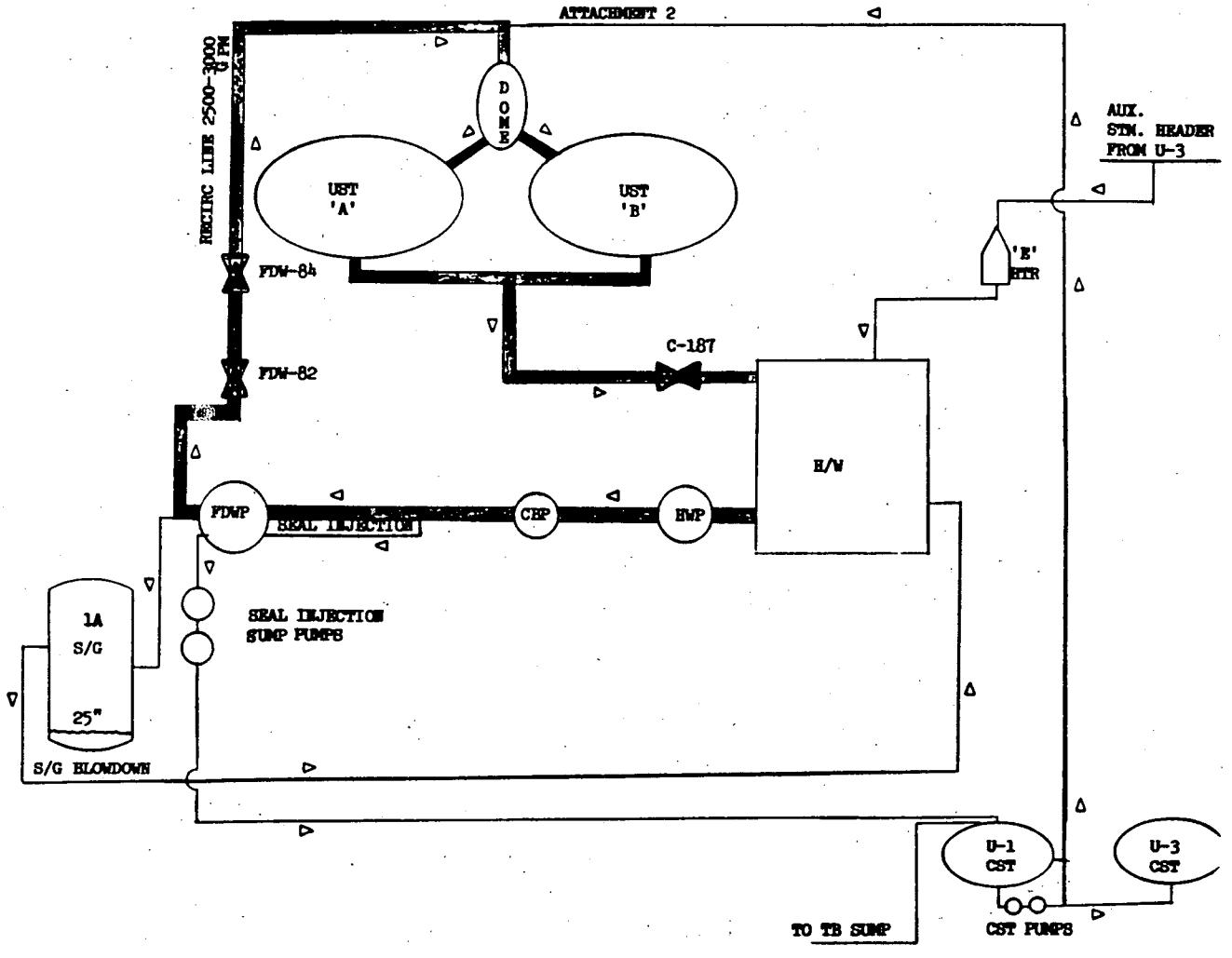

UNIT 1
UST LEVEL
6-4-90

ATTACHMENT 3

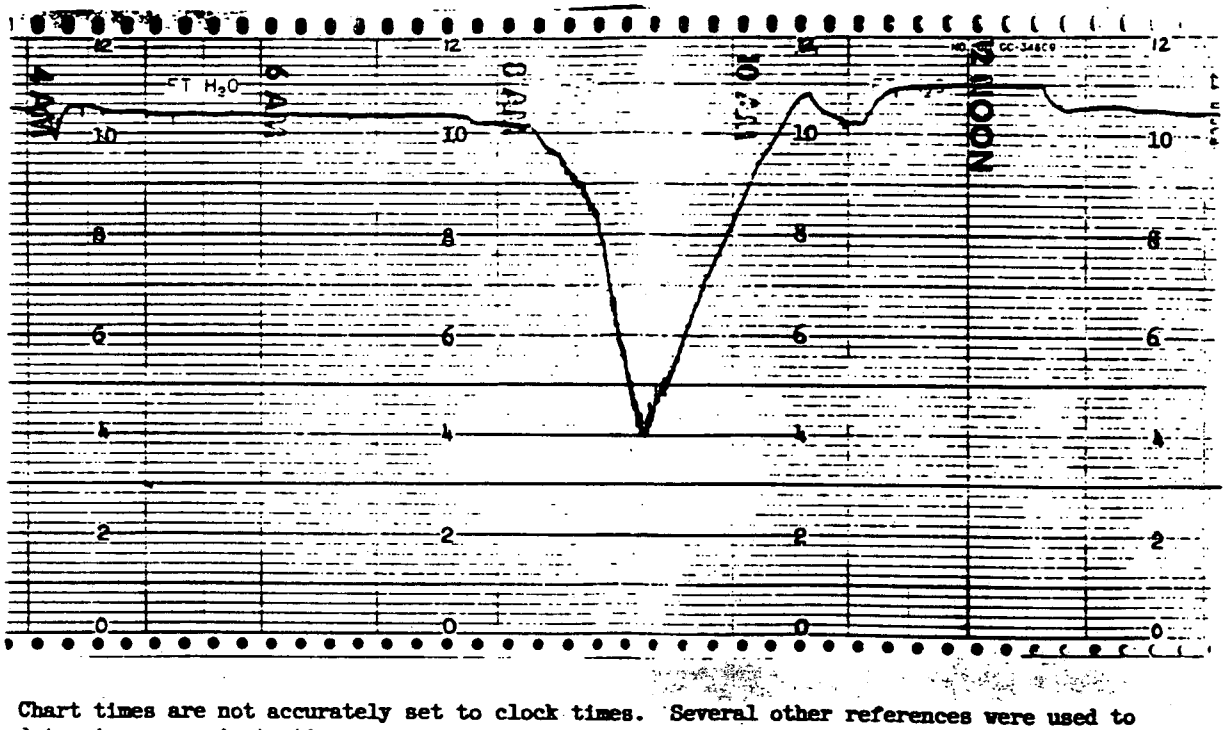

Chart times are not accurately set to clock times. Several other references were used to determine approximate times.