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50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287
AUTH.NAME AUTHOR AFFILIATION
PARKER,W.O. Duke Power Co.
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. Office of Nuclear Reactor Regulation, Director
EISENHUT,D.G. Division of Licensing

SUBJECT: Application to amend OLs,revising License Condition 3E to authorize completion of mods identified in Table 3.1 of NRC 780811 fire protection safety evaluation on facility. Supporting documentation encl.

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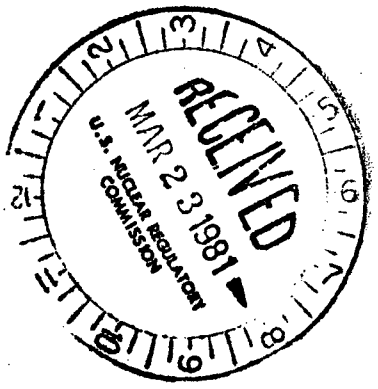
DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

March 18, 1981



Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: D. G. Eisenhut, Director
Division of Licensing

Re: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Sir:

Pursuant to 10 CFR 50, §50.48 and your letter of February 20, 1981, the following information related to modifications necessary to meet 10 CFR 50, Appendix R is provided. Additionally, a proposed revision to the Oconee Facility Operating License Condition 3E is requested in order to make the Oconee License consistent with the rule.

The plan and schedule for the necessary improvements to design features to meet Section III.G (Associated Circuits), III.J (Emergency Lighting) and III.O (Oil Collection System for Reactor Coolant Pump) of Appendix R to 10 CFR 50, which is required by 10 CFR 50, §50.48(c)(5), is provided in the following:

1. Fire Protection of Safe Shutdown Capability - Attachment 1.

2. Emergency Lighting - Attachment 2

3. Oil Collection System for Reactor Coolant Pump - Attachment 3

As stated in Attachment 1, Duke is requesting a 30 day extension to allow completion of the engineering evaluation of separation of cables in non-inerted containments. The results of this effort will be provided in a supplemental report which will be submitted by April 17, 1981.

The design description of the Oconee Standby Shutdown Facility was submitted March 28, 1980 and is currently under Staff review. The SSF is currently under construction at Oconee and is expected to be completed within 30 months after NRC approval of the design.

In order to allow continued operation of Oconee during the construction of the SSF, it is requested that the existing License condition 3E and Table 3.1 be changed as indicated in Attachment 4. This change will make the Oconee License consistent with 10 CFR 50, §50.48. Based on the current construction schedule, it is estimated that the Facility itself will be completed in July 1982 with

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Unit specific tie-ins to be completed during refueling outages for each unit following this date. Based on the projected operating schedule, final implementation of the SSF at Oconee will occur by the end of 1983.

In view of the pending legal actions associated with the implementation of this rule, Duke Power Company reserves the right to re-evaluate the commitments made in this submittal upon resolution of the legal actions.

Pursuant to 10CFR 170, §170.22, this request is considered to consist of one Class II license amendment, as the safety significance has been addressed by the issuance of 10CFR 50.48 which included the schedule for completion of similar items, and upon which this request has been based and two Class I license amendments. Accordingly, please find attached a check in the amount of $2,000.

Very truly yours,

William O. Parker, Jr.

RLG:pw
Attachment

WILLIAM O. PARKER, JR., being duly sworn, states that he is Vice President of Duke Power Company; that he is authorized on the part of said Company to sign and file with the Nuclear Regulatory Commission this application to amend to Oconee Facility Operating License; and that all statements and matters set forth therein are true and correct to the best of his knowledge.

William O. Parker, Jr., Vice President

Subscribed and sworn to before me this 18th day of March, 1981.

Notarial Seal

My Commission Expires:

September 20, 1984

ATTACHMENT 1

SECTION III.G - FIRE PROTECTION OF SAFE SHUTDOWN CAPABILITY

As outlined in our March 28, 1980 submittal of the design description for the Oconee Standby Shutdown Facility, Duke plans to exercise the option of a dedicated shutdown capability referenced in Section III.G.3. The March 28, 1980 submittal did not address the associated circuits referenced in Section III.G.3 and in Darrell G. Eisenhut's February 20, 1981 generic letter 81-12 or separation of cables in noninerted containments referenced in Section III.G.2. These are addressed in this attachment.

With regard to associated circuits as outlined in Section III.G.3 of Appendix R, Duke has conducted a review of associated circuits at Oconee. The results of this review are provided in the following.

Shutdown capabilities are assured by separating the shutdown divisions by fire barriers outside of the Reactor Building. Associated circuits, which may be associated with the redundant shutdown divisions, have not had the same fire barrier requirements applied.

The subject associated circuits can be divided into two categories as follows:

1. Those circuits considered associated by being electrically connected to a shutdown division's power busses.

2. Those circuits considered associated by proximity by sharing raceways, etc.

The first category of associated circuits can be addressed by use of the following "worst case" illustration.

A fire zone was postulated which contained both Division A and Standby Shutdown Facility (SSF) shutdown cables. By the Duke criteria Division B Shutdown cables would not be present in this fire zone. However, the criteria does not prohibit Division B associated cables (which are connected to the Division B power busses) from being present in the subject fire zone. (See Figure 1 for pictorial representation)

For the case of an all consuming fire in the fire zone no degradation of the Division B shutdown division would occur since the associated circuit breaker (or fuse) will operate to clear the fault provided this breaker is coordinated with the bus incoming breaker. This breaker coordination will be provided as part of the Duke design.

The second category of associated circuits are those which are routed in the same raceways as shutdown circuits but are not supplied power from the shutdown busses. In this instance the goal is to contain or interrupt the fault current in the associated circuit to prevent it from propagating to a redundant shutdown division cable (see Figure 2). For this case breaker coordination is not an issue since the power source to the associated cable is not from a shutdown division bus.

Interruption of the fault current is accomplished by the breaker feeding the associated circuit. The breaker will be adequately sized to protect the cable per standard Duke Power design practice.

Additionally the cable used by Duke Power is of the armored type. We have performed tests that demonstrate the armor provides adequate protection to prevent a fault within a cable from propagating into an adjacent cable, even if the breaker feeding the faulted cable fails to trip.

Hence as shown above, the presence of associated circuits in a fire zone with a shutdown division will not propagate the effects of a fire in that zone in such a way as to prevent the other shutdown division from performing its intended function.

Section III.G.3 of Appendix R further requires that fire detection and a fixed fire suppression system be installed in the area, room, or zone under consideration. Concurrent with the installation of the Standby Shutdown Facility, the west Penetration Room of each Oconee unit will be effectively protected from the adjacent east Penetration Room by a 3-hour fire barrier. Based on a review of the combustibles in the adjacent area, this 3-hour fire barrier is sufficient to protect SSF cables outside containment without the addition of a fixed fire suppression system in the area under consideration.

If a fire were to occur in one Penetration Room, the other would not be effected and the unit could be placed in a safe shutdown condition with either existing plant systems or the SSF. The SSF is separated from all other zones in the existing facility and has fire protection systems as described in the design description submittal. Further, as an added measure a manual sprinkler system with a density of 0.10 gpm/ft^2 has been provided in the Cable Spreading Rooms, Equipment Room and Cable Shaft of each Oconee unit to provide a greater degree of protection. These items were discussed in the Fire Protection SER issued by the Staff August 11, 1978.

Based on the above discussion, Duke Power requests for Oconee Nuclear Station exemption to the requirement of 10 CFR 50, Appendix R, Section III.G.3 which requires that "a fixed fire suppression system... be installed in the...zone under consideration". The zones under consideration, the east and west Penetration Rooms, are effectively separated by a 3-hour fire barrier, and have fire detection devices installed in both areas. No fixed fire suppression system is deemed necessary in light of the existing commitment to install the SSF.

Referencing separation of cables in noninerted containments as outlined in Appendix R Section III.G.2, Duke requests a thirty day extension from the date of this submittal to complete the engineering evaluation and review of appropriate alternatives and options. This request is based on the complexity of the items which are being addressed in this section.

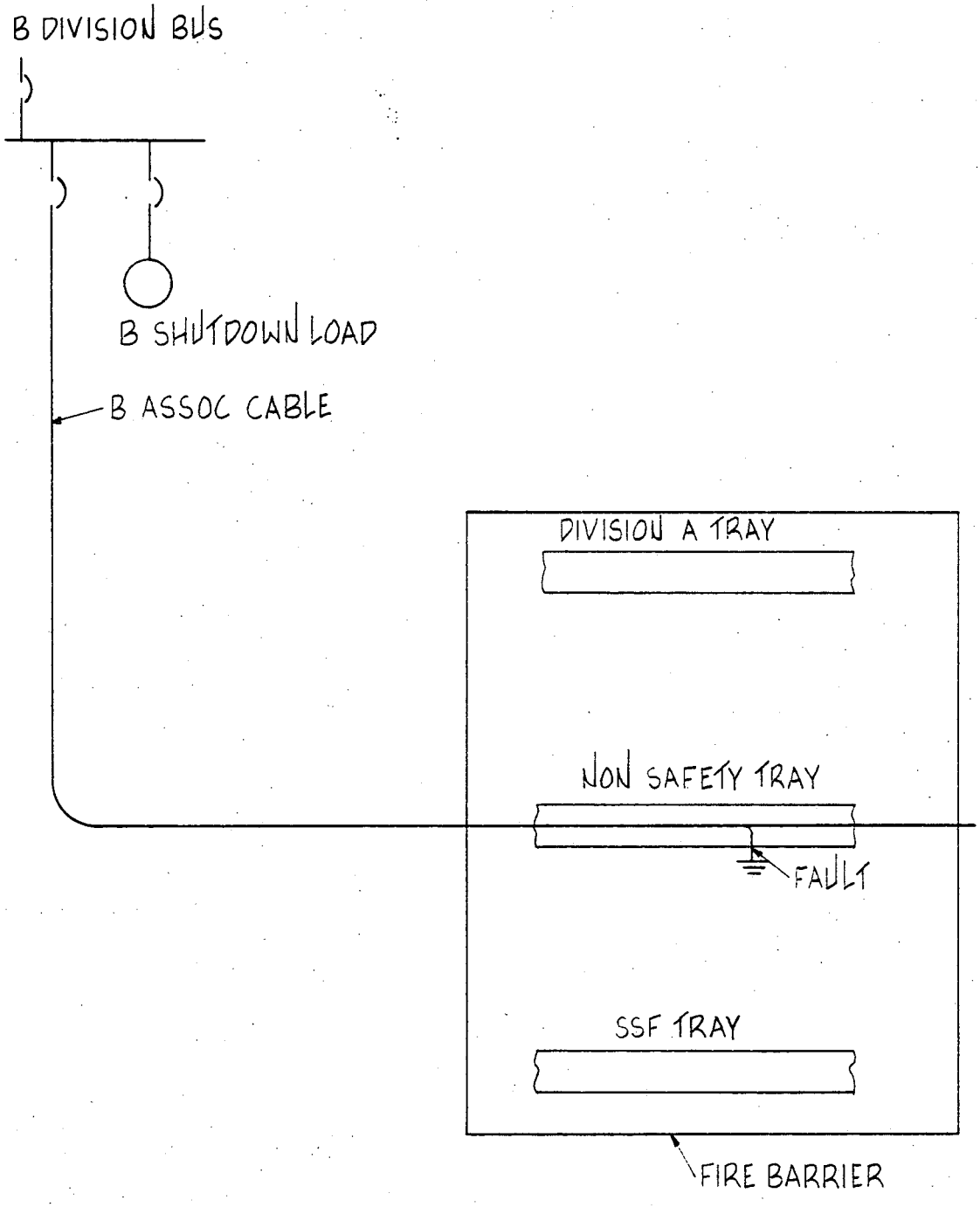

B DIVISION BUS
B SHUTDOWN LOAD
B ASSOC CABLE
DIVISION A TRAY
NON SAFETY TRAY
FAULT
SSF TRAY
FIRE BARRIER

FIGURE 1

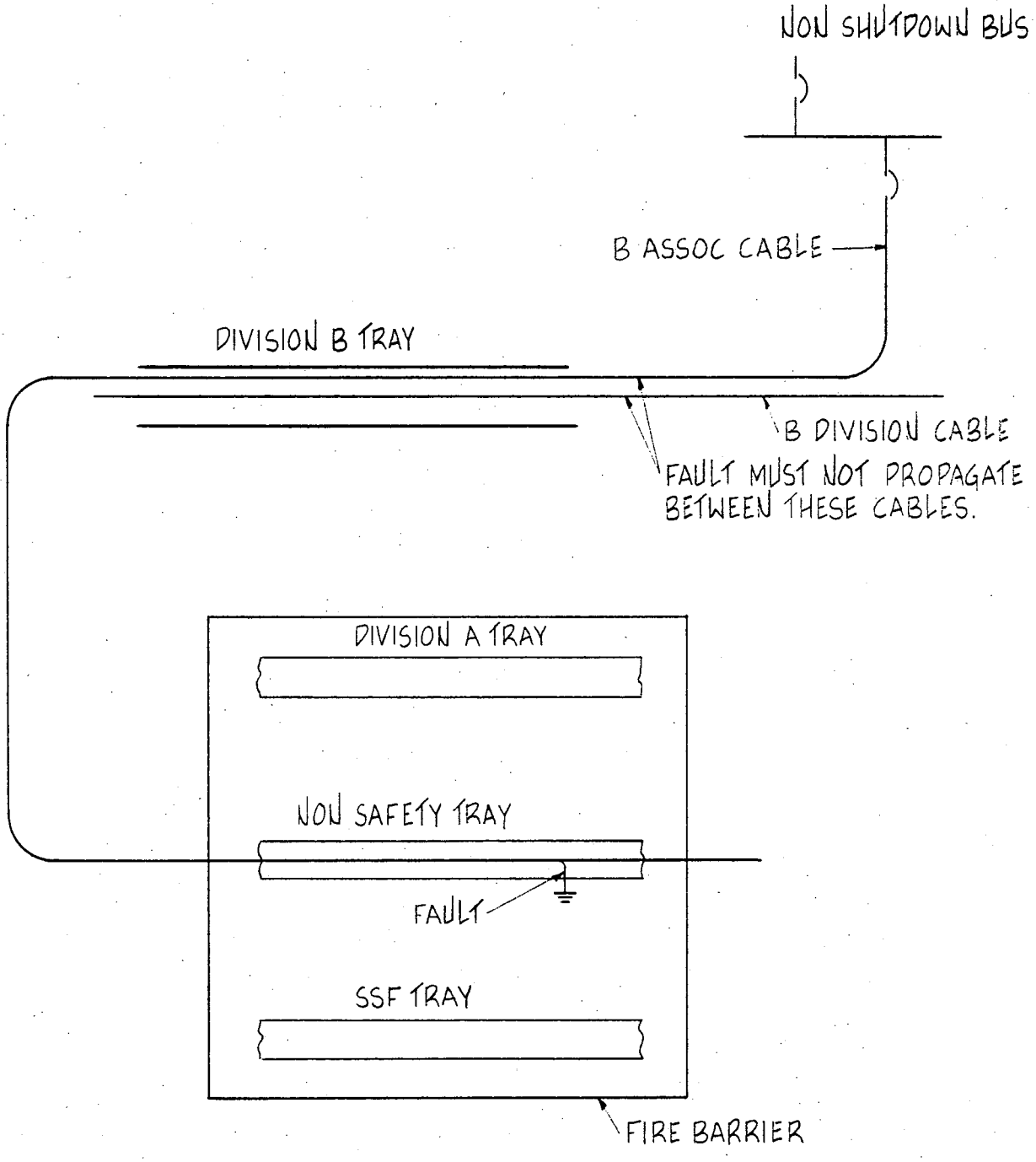

NON SHUTDOWN BUS
B ASSOC CABLE
DIVISION B TRAY
B DIVISION CABLE
FAULT MUST NOT PROPAGATE BETWEEN THESE CABLES.
DIVISION A TRAY
NON SAFETY TRAY
FAULT
SSF TRAY
FIRE BARRIER

FIGURE 2

ATTACHMENT 2

SECTION III.J - EMERGENCY LIGHTING

Lighting in the Oconee Turbine, Auxiliary and Reactor Buildings is accomplished by use of three basic lighting systems, each of which is independent of the other except for required switching interfaces, and each of which are actually broken down into rather small systems providing lighting to small specific areas. These lighting systems are defined as:

1. The normal AC lighting is provided at 208/120 volt AC through lighting panelboards fed from many diverse power sources and located at multiple areas throughout the Turbine Building, Auxiliary Building, Reactor Building and other plant areas.

2. The backup 250 volt DC deadlight system is also known as the emergency DC lighting system. DC lighting is located at selected areas in the Turbine Building, Auxiliary Building, Reactor Building and other plant areas and provides emergency lighting in those areas whenever the normal AC lighting is lost. The DC lighting is automatically switched on by a DC relay which drops out when AC to the area lighting panelboard is lost. There are many DC lighting relays and associated DC lights.

3. The emergency 208/120 volt AC lighting system is our third system. It is actually two systems per unit. The two systems are identified as "A" train and "B" train with each train fed from a separate engineered safeguard motor control center. The emergency AC lighting is utilized in the Auxiliary Building and the Reactor Building to supplement the normal AC lighting and the DC deadlights in these areas.

   In addition to the lighting in these areas, the Standby Shutdown Facility contains controls and equipment necessary to achieve a hot shutdown condition and is the only area needed for operation of this equipment.

   The lighting system in the SSF consists of normal AC lighting system and a backup DC deadlight system powered from batteries located in the SSF. This DC system is completely separate from the DC system provided in the main plant. The DC lighting system will provide one and one half hours of continuous light without recharge. The SSF is also provided with a Diesel Generator which would be started within ten minutes of loss of AC power and would provide continuous charging to the DC batteries.

   With the separation of shutdown systems and emergency lighting systems we have concluded that the emergency lighting system meets the intent of Appendix R in that one event will not cause loss of lighting in both the SSF and the main plant.

   No modifications to the existing system are required.

ATTACHMENT 3

SECTION III.O - OIL COLLECTION SYSTEM FOR REACTOR COOLANT PUMP

Each Reactor Coolant Pump motor at the Oconee Nuclear Station will be equipped with a separate oil collection system designed to withstand a safe shutdown earthquake (SSE). The collection system for each motor will be capable of collecting lube oil from potential pressurized and unpressurized leakage sites from the reactor coolant pump motor lube oil systems. Potential leakage points on the pump motor which are protected will include lift pump and piping, overflow lines, lube oil cooler, oil fill and drain lines and plugs, flanged connections on oil lines and lube oil reservoirs. A schematic is attached to illustrate areas that will be covered. Potential leakage will be collected and drained in a pipe sized to accommodate the largest potential leak system inventory (250 gal). A flame arrestor will be provided for the tank vent.

The systems will be installed during one of the following outages which commences 180 days or more after the effective date of Appendix R; the first refueling outage, a planned outage which last at least 60 days, or an unplanned outage that lasts at least 120 days.

ATTACHMENT 4

DUKE POWER COMPANY
OCONEE NUCLEAR STATION

PROPOSED LICENSE CONDITION CHANGE
PROPOSED REVISION TO TABLE 3.1 OF NRC LETTER DATED AUGUST 11, 1978

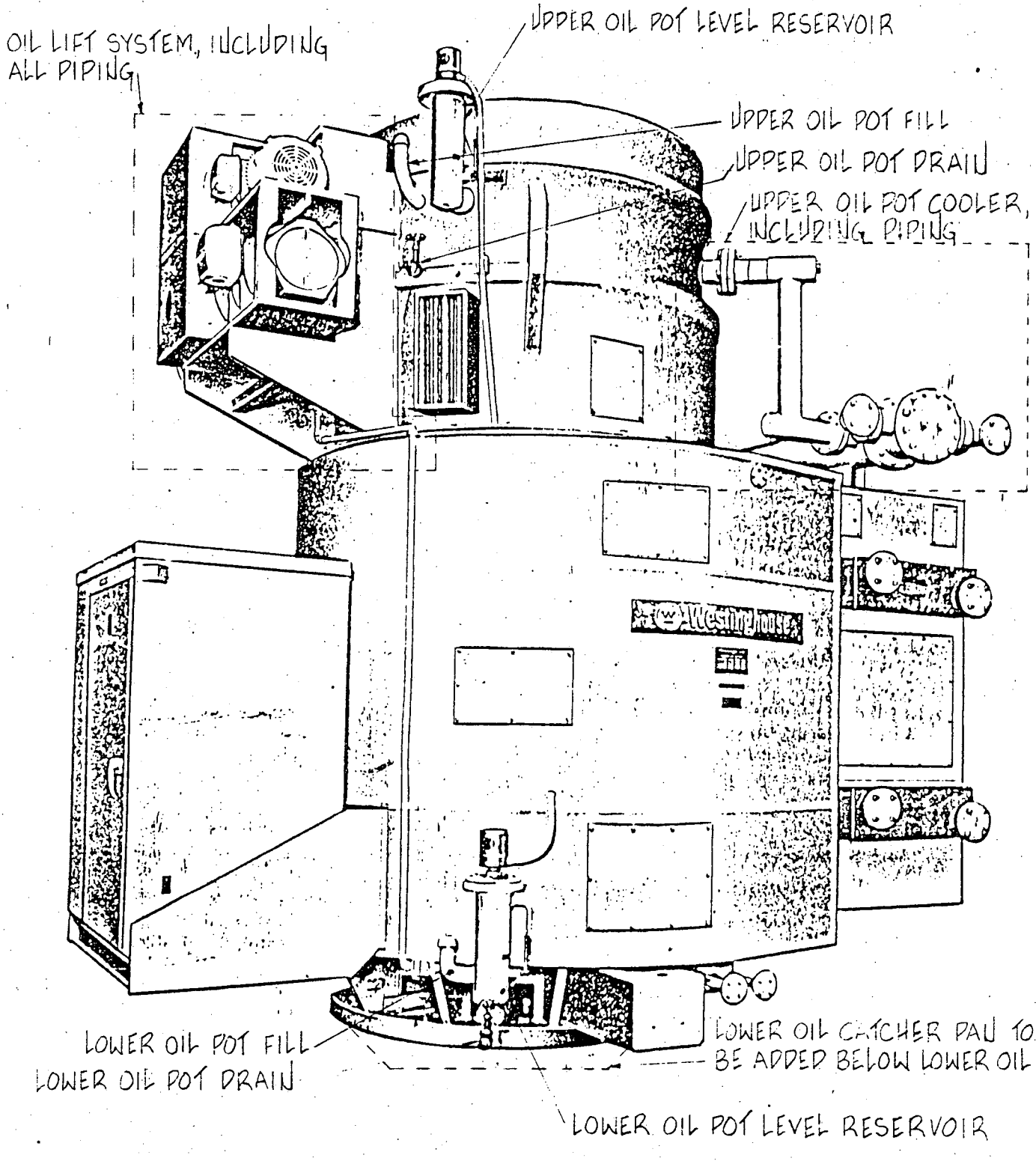
Revise to read as follows:

1. License Condition 3E.

   The licensee is authorized to proceed with and is required to complete the modifications identified in Table 3.1 of the NRC's Fire Protection Safety Evaluation Report on the Oconee Nuclear Station dated August 11, 1978. The modifications shall be completed on the schedule specified by Table 3.1.

2. Table 3-1

3.1.14	Dedicated Safety Shutdown Facility	30 months after NRC approval of design.



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