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 FITZPATRICK, E. Indiana Michigan Power Co. (formerly Indiana & Michigan Ele
 RECIP. NAME RECIPIENT AFFILIATION
 RUSSELL, W.T. Document Control Branch (Document Control Desk)

SUBJECT: Requests emergency TS change to allow extension of due date
 for SRs 4.8.2.3.2.c.3 & 4.8.2.3.2.d for DCP Unit 2 CD
 battery from 940907 until just prior to core reload during
 upcoming refueling outage, per 940817 conversation w/NRC.

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AEP:NRC:1181F

Donald C. Cook Nuclear Plant Unit 2
Docket No. 50-316
License No. DPR-74
REQUEST FOR EMERGENCY TECHNICAL
SPECIFICATION CHANGE: CD BATTERY
AND CHARGER

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

Attn: W. T. Russell

August 18, 1994

Dear Mr. Russell:

Pursuant to a conversation with our NRC-NRR Project Manager on August 17, 1994, the purpose of this letter is to request an emergency technical specification (T/S) change for T/Ss 4.8.2.3.2.c.3, 4.8.2.3.2.d, and 4.8.2.4.2. The requested change is to allow extension of the 18-month battery charger and battery service test required by T/Ss 4.8.2.3.2.c.3 and 4.8.2.3.2.d, respectively (and referenced by T/S 4.8.2.4.2) from their present required date of September 7, 1994, until just prior to core reload in the upcoming Unit 2 refueling outage.

Our reasons for the change, 10 CFR 50.92 No Significant Hazards Analysis, and justification for submitting this change on an emergency basis are contained in Attachment 1. A copy of the present T/S, marked to reflect the proposed changes is contained in Attachment 2. The proposed replacement T/S pages are contained in Attachment 3.

We believe that the proposed changes will not result in (1) a significant change in the types of effluents or a significant increase in the amounts of any effluent that may be released offsite, or (2) a significant increase in individual or cumulative occupational radiation exposure.

These changes will be reviewed by the Plant Nuclear Safety Review Committee prior to submittal and will be reviewed by the Nuclear Safety and Design Review Committee at its next regularly scheduled meeting.

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ADD 11

W. T. Russell

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AEP:NRC:1181F

In compliance with the requirements of 10 CFR 50.91(b)(1), copies of this letter and its attachments have been transmitted to Mr. J. R. Padgett of the Michigan Public Service Commission and the NFEM Section Chief of the Michigan Department of Public Health.

This letter is submitted pursuant to 10 CFR 50.30(b) and, as such, an oath statement is attached.

Sincerely,



E. E. Fitzpatrick
Vice President

ar

Attachments

cc: A. A. Blind
G. Charnoff
J. B. Martin, NRC Region III
NRC Resident Inspector
NFEM Section Chief
J. R. Padgett

STATE OF OHIO)
COUNTY OF FRANKLIN)

E. E. Fitzpatrick, being duly sworn, deposes and says that he is the Vice President of licensee Indiana Michigan Power Company, that he has read the foregoing REQUEST FOR EMERGENCY TECHNICAL SPECIFICATION CHANGE: CD BATTERY AND CHARGER and knows the contents thereof; and that said contents are true to the best of his knowledge and belief.

E E Fitzpatrick

Subscribed and sworn to before me this 18th

day of August, 1994.

Rita D. Hill
NOTARY PUBLIC

RITA D. HILL
NOTARY PUBLIC, STATE OF OH,
MY COMMISSION EXPIRES 6-28-99

ATTACHMENT 1 TO AEP:NRC:1181F
REASONS, 10 CFR 50.92 ANALYSES, AND
JUSTIFICATION FOR EMERGENCY BASIS
FOR PROPOSED CHANGES TO THE
DONALD C. COOK NUCLEAR PLANT UNIT 2
TECHNICAL SPECIFICATIONS

(1) DISCUSSION OF THE T/Ss FOR WHICH AN EMERGENCY T/S CHANGE IS REQUESTED.

The proposed emergency T/S change is to allow extension of the due date for surveillance requirements 4.8.2.3.2.c.3 and 4.8.2.3.2.d for the Unit 2 CD battery from September 7, 1994, until just prior to core reload during the upcoming refueling outage. The same extension is requested for surveillance requirement 4.8.2.4.2, which references T/S 4.8.2.3.2. We are proposing to add a footnote to these specifications, which will reference a new T/S 4.0.9. This new specification will state:

By specific reference to this section, those surveillances which must be performed on or before September 7, 1994, and are designated as 18-month surveillances may be delayed until just prior to core reload in the Unit 2 Cycle 9-10 refueling outage.

T/S 3/4.8.2.4 contains the DC-distribution requirements for Modes 5 and 6. One of the two station batteries and one of its two associated chargers are required to be operable in these modes. With no battery or charger operable, containment integrity must be established within eight hours. T/S 4.8.2.3.2.c.3 requires that the battery charger be demonstrated capable of supplying at least 140 amps at greater than or equal to 250 volts for at least four hours. This test must be conducted every 18 months. T/S 4.8.2.3.2.d requires that a battery service test be conducted every 18 months, specifically with the unit in Modes 5 or 6. T/S 4.8.2.4.2 requires, for Modes 5 and 6 operation, that the battery and charger be demonstrated operable per T/S 4.8.2.3.2.

The Unit 2 refueling outage is scheduled to begin September 6, 1994. The T/S 4.8.2.3.2.c.3 and 4.8.2.3.2.d surveillances, which are required for Modes 5 and 6 per T/S 4.8.2.4.2, expire on September 7, 1994. (This date includes the 25% grace period allowed by T/S 4.0.2.) For reasons discussed in detail below, relief is needed from the requirement to perform the T/Ss 4.8.2.3.2.c.3 and 4.8.2.3.2.d surveillances on one battery and associated chargers (2-CD) in order to avoid approximately a one week addition to the refueling outage length.

(2) DISCUSSION OF THE CIRCUMSTANCES SURROUNDING THE SITUATION, INCLUDING THE NEED FOR PROMPT ACTION AND A DESCRIPTION OF WHY THE SITUATION COULD NOT HAVE BEEN AVOIDED.

In 1992, both units of Cook Nuclear Plant were shut down for refueling. Unit 2 was the first unit shut down, in February, 1992. The original intent was that the Unit 1 outage would begin after Unit 2 was returned to service. However, during startup for the present Unit 2 cycle (Cycle 9) in July 1992, the unit experienced severe turbine-generator vibration problems that required refurbishment of the Unit 2 generator rotor. The vibration problems resulted in the unit being down approximately six months. Thus, Unit 2 was not returned to service until after the Unit 1 refueling outage was completed. The 2-CD battery and chargers were surveillance tested during the refueling outage, and then again in October 1992 to help ensure that the surveillances would not expire during Cycle 9.

In order to provide sufficient separation between unit refueling outages, the decision was made to run Unit 2 at a reduced power level. The plan was to extend Unit 2 Cycle 9 by approximately five months, with an anticipated outage start date of August 6, 1994. In order to support this, surveillance interval extensions were requested from the NRC for surveillances due on or before August 13, 1994. The outage start date was subsequently moved to early September due to projected AEP system demand in August 1994. The requested surveillance interval extensions were approved by the NRC via Amendments 158 (December 22, 1993), 159 (January 26, 1994), and 162 (June 1, 1994). Relief for the 2-CD battery and charger surveillances was not requested because these surveillances had a due date of September 7, 1994, which was after the original anticipated outage start date.

It is noted that Unit 2 was shut down in February 1994 for replacement of the main generator rotor due to additional vibration problems. The surveillances for which we are requesting extension were not performed during this down time. This is because the impact of the surveillance due dates relative to the outage schedule were not evident at that time. (As discussed below, the first detailed, resource leveled outage schedule was not released until August 5, 1994.)

The typical scheduling strategy is to look at the total work scope to determine which train of equipment will require the most amount of work, and to schedule that train first. This is so that problems that may arise are identified earlier in the outage, allowing the most flexibility in resolving them. During this refueling outage, the 2-AB battery (train B) will be replaced, so train B was scheduled first.

The decision to schedule train B first was also supported by the fact that blackout testing following each electrical train outage impacts certain support functions required for other outage evolutions (containment lighting, polar cranes, etc.). These functions are impacted more by a train A outage than a train B outage.

The 2-CD battery surveillance expires on September 7, 1994. The 2-AB battery surveillance expires on September 18, 1994. The schedule as outlined has the Train B power outage beginning September 7 and ending September 27. The Train A work commences September 27 and ends October 8. The outage plan calls for the reactor core to be completely offloaded. This is expected to be completed by September 21, 1994, with reload expected to begin October 10, 1994. With this schedule and the existing T/S surveillance due dates, on September 7 neither DC train would be operable and therefore containment integrity would be required, per T/S 3.8.2.4. This essentially shuts down all outage activities, because of the inability to open a containment service penetration or to move equipment through an airlock. The requested relief will allow us to maintain the 2-CD battery and charger operable, and thus avoid having to establish containment integrity. All delayed surveillances will be completed prior to reload of the core.

The scheduling process did not provide a mechanism to tie information regarding surveillance due dates to the schedule. (See Section 4 for a discussion of corrective actions which will be taken to avoid this problem in the future.) Typically, this is not an issue since most T/S requirements are not applicable below Mode 4. For those T/S requirements which are applicable in Modes 5 and 6, the typical action statement is to suspend core alterations or positive reactivity changes. The batteries are somewhat of an outlier, however, since at least one battery must be operable in Modes 5 and 6 and because the action statement is unusual in that it requires containment integrity to be established.

(Those types of T/S action statements are typically covered through basic scheduling logic sequence ties.) The first detailed, resource leveled version of the outage schedule was not issued until August 5, 1994. Shortly thereafter (August 10) the scheduling problem was discovered. At that point, we began investigating various options. By August 15, it was clear that all options but emergency T/S relief would result in an early shutdown of the unit and/or add considerably to the outage length.

Release of the detailed outage schedule is the culmination of approximately 13 months of work. Besides consideration of minimization of outage length, the schedule also reflects careful consideration of shutdown risk, in order to minimize the risk to public health and safety. At this point, time does not permit rewriting the schedule with confidence to allow work on train A first. Thus, we would have to perform the surveillance on the 2-CD battery and charger at the beginning of the outage, prior to removing the 2-AB battery from service.

The battery test involves demonstrating the ability of the battery to supply simulated or actual loads for eight hours. Because the battery is drawn down during the test, it becomes inoperable. There are redundant chargers for each battery, with only one charger per battery required per T/Ss. A charger could be tested at power while disconnected from the battery. However, this lessens redundancy built into the DC system, and would involve a substantial rewrite of the surveillance procedure. Typically, the chargers are tested in conjunction with the service test of the battery, during the outage. The chargers are used sequentially to recharge the battery following the drawdown, thereby satisfying the charger surveillance. The total duration time of the testing typically approaches one week. This is due to the lineup and restoration times, as well as the approximately 72 hours required to recharge the battery following the service test. Performance of the 2-CD surveillance at the beginning of the outage will therefore add approximately one week to the outage length.

- (3) A DISCUSSION OF THE SAFETY BASIS FOR THE REQUEST AND AN EVALUATION OF THE SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES OF THE PROPOSED COURSE OF ACTION.

Core reload is expected to occur by October 10, 1994. Thus, the total period of time the request will be in effect is expected to be about one month. For the battery, the surveillance that is being extended is the service test performed every 18 months to verify the battery's ability to satisfy its design duty cycle. The test is eight hours in duration, and the load profile is in accordance with our battery sizing calculations.

According to the maintenance records for the weekly, quarterly, 18-month, and 60-month surveillances performed on the battery per T/S 4.8.2.3.2, the 2-CD battery is demonstrating very high capacity with no indications of problems. Based on the following information, we are confident that the 2-CD battery will remain operable during the proposed extension period.

1. The 2-CD battery was capacity tested in the fall of 1992, with a resultant capacity of 110%. Since the minimum acceptable capacity, per IEEE 450, is 80%, the test results represent a 30% capacity margin. Batteries of the type used at Cook Nuclear Plant might lose up to approximately 1% capacity per year, depending on the battery age. Assuming 1% capacity loss per year, the expected capacity through the fall of 1994 would be approximately 108%, which represents a 28% capacity margin.
2. The 2-CD battery was service tested in the spring of 1992 with a terminal voltage (after the required 8-hour discharge) of 226 volts. The minimum acceptable terminal voltage is 210 volts, which is industry standard. Maintenance records indicate that the service test terminal voltage decreases no more than 3 volts per 18-month period.

Assuming worst-case and conservatively using 36 months as the time between testing, the minimum terminal voltage in the fall of 1994 would be no less than 220 volts, which is well above the minimum 210 volts.

It should be noted that the 220 volt value conservatively assumes full loading on the battery, which is not the case as detailed in the following paragraph.

3. Emergency loads on the 2-CD battery during Modes 5 and 6 are a fraction of those during operation in Modes 1 through 4. Specifically, the three turbine generator lube and seal oil pumps, which represent nearly one-half of the load on the battery (185 amps out of 398 amps) would not be required. As such, should the battery be called upon to supply emergency loads during the outage, only a portion of the available capacity would be needed.
4. The average electrolyte temperature for the 2-CD battery was 83°F over the last 18 months. Since this value is well within the design operating range for the battery, the battery is considered to have aged normally over the past 18 months. This position supports the estimates provided in the previous paragraphs 1 and 2.
5. Since low electrolyte temperatures reduce nominal battery capacity, the battery room temperatures are checked once every 12 hours. The minimum acceptable room temperature is 70°F. Since establishing this temperature and implementing its monitoring in the shift tour guidelines in 1992, there have been no instances where the 2-CD battery room temperature has fallen below 70°F.

Past maintenance history also supports extension of the battery charger surveillance. Since their installation in 1988, no charger has failed the 18-month surveillance. The T/S minimum acceptable performance of 140 amps supplied at 250 volts DC is not severe compared to the rating of the chargers, which is 375 amps at 280 volts. Based on these considerations, we are confident that the chargers will remain operable during the extension period.

Additionally, we note that there are two chargers per battery, with only one required per T/Ss. Should the in-service charger become inoperable, an annunciator in the control room would alert the operators, who would then place the backup charger in service. The chargers receive emergency power from the emergency diesel generators, thereby increasing the reliability of the 250 volt DC system in the event of a loss of offsite power.

(4) DISCUSSION OF COMPENSATORY ACTIONS.

The relief for the 2-CD battery and chargers is for the requirements of T/S 4.8.2.3.2.c.3 and 4.8.2.3.2.d, only. The weekly and quarterly surveillances performed on the battery will continue on their normal schedule as required by the T/Ss. These surveillances check the battery cells for correct specific gravity, cell and overall voltage, float voltage, and electrolyte level. Also, the requirements of T/Ss 4.8.2.3.2.c.1 and 4.8.2.3.2.c.2 will be performed by their due date. These are 18-month surveillances which ensure that there is no visual indication of physical damage or abnormal degradation of the battery and racks, and that the battery connections are clean, tight, free of corrosion and coated with anti-corrosion material.

Following the completion of the Unit 2 refueling outage, our scheduling development strategies will be reviewed and enhanced to include closer evaluation of the impact of surveillance due dates relative to outage work scope and duration. These enhancements will be incorporated prior to the next set of refueling outages.

(5) DISCUSSION WHICH JUSTIFIES THE DURATION OF THE REQUEST.

As discussed in Section 2, above, the relief is needed for the 2-CD battery and charger beginning with the surveillance due date (September 7, 1994). The required surveillances will be performed prior to reloading of the core, so that a full complement of DC power will be available. The core is currently expected to be reloaded by October 10, 1994.

(6) THE BASIS FOR CONCLUDING THAT THE REQUEST DOES NOT INVOLVE A SIGNIFICANT HAZARDS CONSIDERATION OR POSE A POTENTIAL DETRIMENT TO THE PUBLIC HEALTH AND SAFETY.

As stated in 10 CFR 50.92(c), a proposed change does not involve a significant hazards consideration if the change does not:

1. involve a significant increase in the probability or consequences of an accident previously evaluated,
2. create the possibility of a new or different kind of accident from any accident previously evaluated, or
3. involve a significant reduction in a margin of safety.

Criterion 1

As discussed above, the previous maintenance history on the 2-CD battery and chargers gives us confidence that the battery and chargers will remain operable during the extension period. Weekly and quarterly checks of the battery will continue to be performed, as required by T/S 4.8.2.3.2. Also, the 18-month surveillances of the battery for signs of physical damage or abnormal deterioration, as well as the 18-month check of the cell-to-cell and terminal connections will be performed. These considerations lead us to conclude that the proposed surveillance interval extensions will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Criterion 2

As discussed above, the previous maintenance history on the 2-CD battery and chargers gives us confidence that the battery and chargers will remain operable during the extension period. Thus, the proposed change represents no new operating condition or configuration for the plant. Therefore, the proposed extension does not create the possibility of a new or different kind of accident from any previously evaluated.

Criterion 3

As discussed above, the previous maintenance history on the 2-CD battery and chargers gives us confidence that the battery and chargers will remain operable during the brief period of the requested extension. Weekly and quarterly checks of the battery will continue to be performed, as required by T/S 4.8.2.3.2. Also, the 18-month surveillances of the battery for signs of physical damage or abnormal deterioration, as well as the 18-month check of the cell-to-cell and terminal connections will be performed. These considerations lead us to conclude that the proposed surveillance interval extensions will not involve a significant reduction in a margin of safety.

(7) BASIS FOR CONCLUDING THAT THE REQUEST DOES NOT INVOLVE ADVERSE CONSEQUENCES TO THE ENVIRONMENT.

This proposed emergency T/S change involves a change in T/S surveillance requirements. We have determined that this proposed emergency T/S change does not involve a significant increase in the amount, or a significant change in the types, of any effluent that may be released offsite, that there is no significant increase in individual or cumulative occupational radiation exposure, and that the amendment should not involve significant hazards consideration. Accordingly, this proposed emergency T/S change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with granting of this proposed emergency T/S change.