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SUBJECT: Requests approval of changes to min emergency staffing levels for DPC nuclear site emergency plans under Cost Beneficial Licensing Actions (CBLA) process. Supporting justification of proposed changes & info re CBLA encl.

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DUKE POWER

May 8, 1995

**Document Control Desk
Nuclear Regulatory Commission
Washington, DC**

**Subject: Duke Power Company
Revision of Table B-1 (NUREG 0654)
Oconee - Docket Nos. 50-269, -270, -287
McGuire - Docket Nos. 50-369, 50-370
Catawba - Docket Nos. 50-413, 50-414**

The purpose of this letter is to request prior approval of changes to minimum emergency staffing levels for Duke Power Company nuclear site emergency plans under the Cost Beneficial Licensing Actions (CBLA) process. This request is being made pursuant to 10 CFR Part 50.47(b)(2) and 10 CFR Part 50.54(q). We have determined that these changes will not decrease the effectiveness of our emergency plans and the plans as revised will continue to meet the requirements of the regulations.

The changes we wish to make include:

- ◆ Elimination of the 45-minute response for all categories
- ◆ Decrease the minimum number of radiation protection technicians assigned to shift
- ◆ Clarification of the core thermal hydraulics response for CNS and MNS
- ◆ Provide consistency between the three Duke Power Company nuclear sites in the development of the minimum shift staffing levels

Duke Power Company has developed comprehensive emergency plans at the respective nuclear sites. Standard guidance from NUREG 0654 and NUREG 0737 has been traditionally utilized in the past. However, technological advances coupled with fourteen years experience in emergency response have allowed us to improve productivity and effectiveness.

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NRC Document Control Desk
May 8, 1995

Duke Power proposes to change emergency response for minimum staffing levels to allow all three of the nuclear sites to have consistent staffing. We plan to deviate from the written guidance in NUREG 0654, Table B-1 and NUREG 0737. At the time these regulations were adopted, very little guidance had been provided in the area of emergency planning. Since the event at Three Mile Island in 1979, the nuclear industry has learned a great deal about planning for emergency situations. We have also gained valuable experience in establishing an organization to respond to an emergency.

Since 1991, the emergency response organization at the nuclear sites has been divided as follows:

- Onsite response - The Control Room, Technical Support Center and Operational Support Center have primary responsibility for accident assessment and core damage mitigation.
- Offsite response - The Emergency Operations Facility has responsibility for emergency classification, protective action recommendations, field monitoring, communications with offsite agencies, and direct contact with the news media.

Duke Power plans to activate all facilities at an Alert or higher classification. In addition, the Control Room Emergency Coordinator has the authority to activate the emergency facilities any time he determines the need for additional resources to assist with an event.

Attachment A and Attachment B provide the supporting justification of the proposed changes. Attachment C provides information relative to Cost Beneficial Licensing Action. Duke Power requests a meeting with the NRC to discuss our proposal at the earliest possible time. Coleman Jennings at the Oconee Nuclear Site (803) 885-3294 will contact Len Weins to establish the meeting.

Sincerely,



M. S. Tuckman
Senior VP
Nuclear Generation Department

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NRC Document Control Desk
May 8, 1995

xc: L. A. Wiens, ONRR NRC Project Manager, Oconee
Vic Nerses, ONRR NRC Project Manager, McGuire
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George Maxwell, McGuire Senior Resident Inspector
R. J. Freudenberger, Catawba Senior Resident Inspector
S. D. Ebnetter, Regional Administrator, NRC Region II

ATTACHMENT A

COMMUNICATIONS:

Proposal:

Duke Power proposes to eliminate the 45-minute augmentation in the area of communications. This change in response will not adversely affect our program and will not decrease the effectiveness of our plan.

Basis for Change:

Presently, the emergency plans indicate that an additional person is required to augment the control room within 45 minutes of an emergency declaration. Duke Power nuclear plant control rooms have sufficient staff personnel available to handle initial communications to offsite agencies (states, counties, and NRC) until the Technical Support Center is activated. All Duke Power nuclear sites are multiple unit sites and personnel from an unaffected unit are assigned to handle communications until relieved by the Technical Support Center staff.

Two additional people will be provided in the Technical Support Center (within 75 minutes) to relieve Operations of the responsibility for offsite notifications. Two additional people are also required to be available in the Emergency Operations Facility within 75 minutes of the initial emergency classification.

EMERGENCY OPERATIONS FACILITY -

A commitment was made to the NRC to have available at the EOF within 75 minutes of emergency declaration the following people: 1 Senior Manager, 1 Rad Assessment Manager, 1 person to provide accident assessment and plant status information, 1 person for access/control, 2 people for offsite communications. Offsite surveys are considered a part of the EOF and a minimum of two teams (4 people) will be available in 75 minutes to monitor the environment beyond the site boundary. This commitment is being added to Table B-1 to show the initial personnel response required for Emergency Operations Facility.

DOSE PROJECTION

Proposal:

Duke Power proposes to eliminate the 45-minute augmentation in the area of Dose Assessment. This change in response will not adversely affect our program and will not decrease the effectiveness of our plan.

ATTACHMENT A

Basis for Change:

Many changes have occurred in the area of emergency classification and immediate protective actions since 1981. NUREG 0654 and other NRC documents required dose projections to determine protective actions recommendations. Duke Power agrees with the NRC Response Technical Manual and RTM training in that protective action recommendations should be based on plant conditions. Duke Power response procedures require evacuation recommendations for close-in population upon entry into a General Emergency classification.

Dose projection is not required for initial emergency classification or to provide protective action recommendations at a General Emergency classification. Once the Emergency Operations Facility is operational, the Radiation Assessment Manager is available to provide assistance to the Technical Support Center in formulating dose assessments and associated protective action recommendations.

PROGRAM CLARIFICATION - Chemistry

The Chemistry Section at each Duke Power nuclear site is responsible for primary and secondary system sampling as well as handling radwaste operations. Presently, both Catawba and McGuire Emergency Plans have been approved by the NRC to maintain one Chemistry technician as minimum shift staffing. A radwaste operator is required to be available within 75 minutes.

Basis for Change for Oconee (only)

Radwaste staffing is not required during the initial stages of postulated accidents. For liquid waste processing, Operations controls the pumping of the reactor building sumps, high activity waste tanks, and low activity waste tanks which would receive the initial water from the accident. There is adequate tankage to store the water until Radwaste is staffed to process the water. In severe accident scenarios, water would not be transferred or processed until directed by the Technical Support Center to ensure the control of radioactivity. In the event of a primary to secondary tube leak, the Radwaste processing equipment is in a standby mode and requires no set up time.

This change allows Oconee to become consistent with both McGuire and Catawba relative to chemistry minimum shift staffing.

ATTACHMENT A

RADIATION PROTECTION PERSONNEL

Proposal:

Duke Power proposes to have a minimum of two radiation protection personnel on shift at all times to provide the following expertise until additional people are available in 75 minutes:

- 1. Coverage for repair/corrective actions as needed. Individual electronic dosimeters are used as standard dosimetry.**
- 2. Search and rescue as requested.**
- 3. Radiological consequence support to Medical Emergency Response Team, Fire Brigade, and Hazmat Emergency Team as needed.**
- 4. Inplant surveys as required.**
- 5. Radioanalysis (Count room coverage).**
- 6. Onsite (out-of-plant but inside the protected area fence) surveys as needed.**

Ten additional radiation protection technicians and/or supervisors/ staff will report to the site within 75 minutes of emergency declaration. Additional radiation protection personnel will be called in as needed.

The emergency response organization recall system is established to handle events that could happen in a short period of time. Major events culminating in severe core damage and core uncover are not likely within 75 minutes. Past experience indicates time is available to contact additional people to respond as need arises.

This change in response will not adversely affect our program and will not decrease the effectiveness of our plan. An increase in the use of modern technology will provide additional assistance to our shift personnel.

ATTACHMENT A

Basis for change:

Duke Power developed an emergency plan that covers the full spectrum of emergency conditions: radiological, fire, security, chemical spills, and flooding conditions. Presently, the nuclear site emergency plan requires a total of 17 radiation protection personnel to respond to any emergency condition classified under the emergency plan. Their responsibilities include offsite surveys, onsite (out-of-plant) surveys, inplant surveys, access control, coverage for repair actions, search and rescue, medical response, firefighting, personnel monitoring, dosimetry issue and dose calculations. The basis for these requirements is found in NUREG 0654 and NUREG 0737 which were both adopted in 1980-1981 after the Three-Mile Island event. Since that time, many technological advances have been developed in the area of radiation protection and data availability.

Immediate radiological concerns are not necessarily present at the onset of a classifiable emergency. Radiological problems occur primarily after the onset of fuel damage. In a declared emergency situation, Shift Radiation Protection personnel report to the Operational Support Center and work under the direction of the Emergency Coordinator (Operations Shift Manager) until the full emergency response organization is available. The Emergency Coordinator (Operations Shift Manager) along with input from the Radiation Protection personnel would determine the priorities for Radiation Protection support from the OSC.

Initial radiological support from the Radiation Protection onshift personnel would include the following:

- ◆ Obtaining radiological data inside the site protected area fence for use by the Emergency Coordinator (Operations Shift Manager) for emergency classification
- ◆ Provide radiological data to crews dispatched from the OSC to perform various plant lineups and maintenance
- ◆ Prepare turnover information to update the Radiation Protection Manager upon his arrival at the OSC
- ◆ Begin setup of the OSC to support Radiation Protection functions.

Note: The foregoing information has been shared and discussed with the Operations Shift Managers and Supervisors to ensure that all these responsibilities can be met by Radiation Protection personnel onsite in an appropriate and efficient manner.

The inplant radiation monitoring system can be interrogated from the Technical Support Center (TSC), the Operational Support Center (OSC) and the Emergency Operations Center (EOF) and is available to the Emergency Coordinator (Operations Shift Manager) in the Control Room, and the RP Shift Supervisor/lead technician in their normal work area to determine radiological conditions onsite. Both the process and area monitors can be evaluated from the described locations to determine the overall radiological conditions in the plant and for normal release points. The area monitors can be used extensively by the Radiation Protection personnel in the Operational Support Center to identify areas of concern in the plant and "safe" routes for teams dispatched from the OSC.

Presently, Duke Power uses the Electronic Dose Capture System (EDC) together with electronic alarming dosimeters as a secondary device. These electronic dosimeters are solid-state silicon detectors which are not subject to saturation concerns like GM detectors and have the capability to alarm on total accumulated dose, date rate or time. The setpoints on these dosimeters are set either automatically or manually based on the Radiation Work Permit selected for the work to be performed. Each person responding to the emergency will use one of these dosimeters which reduces the need for Radiation Protection personnel to accompany each team dispatched from the OSC. This type of interface with Radiation Protection is the same as for work during non-emergencies.

Teams dispatched from the OSC (with or without a Radiation Protection Technician) during the first 75 minutes of an off-hours emergency, will use the information provided by the inplant radiation monitoring system, the electronic alarming dosimeter, together with specific instructions provided by Radiation Protection personnel in the OSC. These instructions would include turn back dose or dose rate levels and instructions on contacting the OSC should their dosimeters go into alarm. Most teams dispatched will be in constant communication with the OSC via hand-held radios. Those teams without radios would have access to telephone communications and plant page announcements.

ATTACHMENT A

SHIFT WORK MANAGER (STA) - Core Thermal Hydraulics (Catawba and McGuire only. Oconee has already been approved by the NRC for the STA to handle the core/thermal hydraulics duties for the first 75 minutes)

Both Catawba and McGuire maintain an individual onshift to perform the Shift Technical Advisor function which includes advising the Operations Shift Manager regarding core thermal hydraulics. This individual has an engineering degree and maintains an active SRO license and is specially trained to perform the STA function as described below:

- 1. Report to the control room within 10 minutes of notification to perform Shift Technical Advisor (STA) duties.**
- 2. Perform an independent review of core status which involves monitoring of critical safety functions (safety parameter display system at CNS and MNS) to ensure the following are maintained:**
 - ◆ Subcriticality**
 - ◆ Core Cooling**
 - ◆ Heat sink (Steam generator levels and feedwater flow)**
 - ◆ Reactor Coolant System Integrity (pressure and temperature)**
 - ◆ Containment Integrity (valve position)**
 - ◆ Reactor Coolant System Integrity (level)**
- 3. Review core status with Operations Shift Manager and/or Unit Supervisor.**

ATTACHMENT A

REPAIR AND CORRECTIVE ACTIONS

Proposal:

Duke Power proposes to eliminate the 45-minute augmentation in the area of repair and corrective actions. This change in response will not adversely affect our program and will not decrease the effectiveness of our plan.

Basis for Change:

Presently Duke Power follows the guidance provided in NUREG 0654 for minimum staffing for repair and corrective actions as shown in the table below.

	On-Shift Staffing	45-Minute Response	75-Minute Response
Catawba, McGuire & Oconee	I&E - 1 MM - 1	I&E - 2	I&E - 1 MM - 1

NUREG 0654 states that both the mechanical and the I&E maintenance functions onshift may be provided by shift personnel assigned other functions. Duke proposes to change the minimum staffing level to require 2 qualified I&E technicians to be available as minimum on-shift staffing and to require two additional qualified I&E technicians to be available in the OSC within 75 minutes. The forty-five minute response requirement would be eliminated. One of the forty-five minute responders would be placed on shift and the other responder would report in 75 minutes. The mechanical maintenance staffing would remain as described above.

Duke is moving to multi-skilled maintenance teams on shift which will provide 24-hour coverage with technicians that have a primary expertise in either the I&E or Mechanical discipline. Each person would also have some training in the other discipline.

ATTACHMENT A

RESCUE OPERATIONS AND FIRST AID - Clarification (Oconee only)

Presently the Oconee Nuclear Site trains volunteer responders to the site Medical Emergency Response Team (MERT) utilizing the Department of Transportation (DOT) First Responder Program. Two people are required to be oncall each shift for response to a medical emergency. The Emergency Plan presently indicates that 2 additional people will respond in 75 minutes to assist with medical response. This is no longer required since our MERT program now requires two people per shift to respond to medical events. Local support is also available within approximately 15-20 minutes from the time of notification to the Oconee Memorial Hospital. This change is another step in providing consistency between the Duke Power nuclear sites for emergency response minimum staffing requirements.

Attachment B
TABLE B-1 (PROPOSED)

DUKE POWER COMPANY
MINIMUM STAFFING LEVELS

MAJOR FUNCTIONAL AREA	MAJOR TASKS	POSITION TITLE OR EXPERTISE	ON SHIFT*	CAPABILITY FOR ADDITIONS WITHIN 75 MINUTES
Plant Operations and Assessment of Operational Aspects		Unit Supv. (SRO) Control Room SRO Control Room Operators Nuc. Equip. Operators	1 1 2 2	-- -- -- --
Emergency Director and Control (Emergency Coordinator)***		OPS Shift Manager Station Manager	1	1
Notification/Communication	Notify Company Personnel, State, County, Federal Agencies and Maintain Communication	Offsite Communicator	1**	2
Emergency Operations Facility (EOF) Radiological Accident Assessment and Support	EOF Director Dose Assessment Plant status Access & Control Communications Offsite Surveys	Senior Manager Rad. Assessment Manager Ops. Interface Mgr. (ONS) Accdt. Assmt. Mgr.(CNS&MNS) Access/Control Offsite Communications FMT Members (2 Teams)		1 1*** 1 1**** 1 2 4
Radiological Support and Protective Actions	RP Coverage for Repair/Corrective Actions Count Room Search & Rescue Contaminated Injury Medical Response Firefighting Out of plant surveys Inplant surveys	RP Technicians Computer program until TSC activated	2	10
	Chem/Radwaste Operations	Chemistry Technician Radwaste Operator	1	1
Plant System Engineering, Repair and Corrective Actions	Technical Support	Shift Manager (STA) Core/Thermal Hydraulics Electrical Engineering Mechanical Engineering	1 **	1**** 1 1
	Repair and Corrective Actions	Mechanical Maintenance I&E Technician	1 2	1 2
Firefighting	--	Fire Brigade	Per DBD	Local Support
Rescue Operations and First-Aid	--	MERT Team	2**	Local Support
Site Access Control and Personnel Accountability	Security, Personnel Accountability	Security Personnel	All Per Security Plan	--

Attachment B
TABLE B-1(PROPOSED)
DUKE POWER COMPANY
MINIMUM STAFFING LEVELS
(CONTINUED)

The 75-minute clock begins at the time of the initial Emergency Classification. The TSC/OSC are required to be activated within the same time. The EOF must be operational within 75 minutes of the emergency declaration. All facilities are required to be activated at an Alert or higher classification.

- * For each unaffected nuclear unit in operation, at least one unit supervisor, one control room operator, and one non-licensed operator should be maintained. For units sharing a control room, the unit supervisor may be shared between units if all functions are covered.
- ** Provided by shift personnel assigned other responsibilities -
 - ◆ Operations personnel from unaffected units serve as a communicator to the offsite agencies and the NRC.
 - ◆ Shift Work Control Manager serving as the STA performs core thermal-hydraulic evaluations.
- *** Rad Assessment Manager in the EOF will be responsible for providing assistance to the TSC for dose assessment.
- **** Accident Assessment Manager in the Catawba & McGuire EOF will provide additional support to the Technical Support Center in the area of core thermal hydraulics within 75 minutes. Oconee utilizes a Nuclear Engineer in the TSC to provide the support within 75 minutes.

ATTACHMENT C

BASIS FOR COST BENEFICIAL LICENSING ACTION

DESCRIPTION	CATAWBA (30 years remaining on a 40-year License)	MCGUIRE (27 years remaining on a 40-year License)	OCONEE (18 years remaining on a 40-year License)
Current cost of maintaining 4 RP technicians per shift	123,480	123,480	
Current cost of maintaining 3 RP technicians per shift			76,230
Less projected cost of maintaining 2 RP technicians per shift	28,980	28,980	28,980
Savings from reducing current required minimum staffing levels	94,500	94,500	47,250
Savings generated over the remaining life of the station	\$ 2,835,000	\$ 2,351,500	\$ 850,500

CALCULATIONS FOR DETERMINING THE SAVINGS

CATAWBA AND MCGUIRE: (Both Catawba and McGuire Emergency Plans require 4 RP Technicians as minimum staffing).

Shift technician's average time off = 300 hours per year

Vacation = 160 hours

Holidays = 120 hours

Sickness/dependent care = 20 hours

Current cost of maintaining 4 RP technicians per shift:

If all RP Shift Technicians' off time required the use of overtime to maintain staffing level, the cost would be **\$189,900** per year calculated as follows:

300 hours/year x 20 technicians (5 shifts x 4) x \$31.50 OT/hour = **\$189,000** per year

ATTACHMENT C

CATAWBA/MCGUIRE (continued)

No overtime would be required Monday through Thursday from 7:00AM to 5:30PM (40 hours per week) as relief during these hours would be provided from the day shift RP staffing calculated as follows:

40 hours/week x 52 weeks/year x \$31.50 OT/hour = \$65,520 per year of non-overtime relief.

The current cost of maintaining 4 technicians on each shift is \$123,480 per year calculated as follows:

\$189,000 - \$65,520 = \$123,480 per year.

Projected cost of maintaining 2 RP technicians per shift:

If only 2 RP Shift Technicians' off time required the use of overtime to maintain staffing level, the cost would be \$94,500 per year calculated as follows:

300 hours/year x 10 technicians (5 shifts x 2) x \$31.50 OT/hour = \$94,500 per year

Since no overtime would be required on Monday through Thursday from 7:00AM to 5:30 PM (40 hours per week) as relief during these hours would be provided from the day shift RP staffing.

40 hours/week x 52 weeks/year x \$31.50 OT/hour = \$65,520 per year of non-overtime relief.

Projected cost of maintaining 2 RP Technicians on each shift is \$28,980 per year calculated as follows:

\$94,500 - \$65,520 = \$28,980

OCONEE: (Oconee Emergency Plan requires 3 RP Technicians as minimum staffing).

Shift technician's average time off = 300 hours per year

Vacation = 160 hours

Holidays = 120 hours

Sickness/dependent care = 20 hours

Current cost of maintaining 3 RP technicians per shift:

If all RP Shift Technicians' off time required the use of overtime to maintain staffing level, the cost would be \$141,750 per year calculated as follows:

300 hours/year x 15 technicians (5 shifts x 3) x \$31.50 OT/her = \$141,750 per year

No overtime would be required Monday through Thursday from 7:00AM to 5:30PM (40 hours per week) as relief during these hours would be provided from the day shift RP staffing calculated as follows:

40 hours/week x 52 weeks/year x \$31.50 OT/hour = \$65,520 per year of non-overtime relief.

The current cost of maintaining 3 technicians on each shift is \$123,480 per year calculated as follows:

\$141,750 - \$65,520 = \$76,230 per year.

ATTACHMENT C

OCONEE (continued)

Projected cost of maintaining 2 RP technicians per shift:

If only 2 RP Shift Technicians' off time required the use of overtime to maintain staffing level, the cost would be **\$94,500** per year calculated as follows:

300 hours/year x 10 technicians (5 shifts x 2) x \$31.50 OT/hour = \$94,500 per year

Since no overtime would be required on Monday through Thursday from 7:00AM to 5:30 PM (40 hours per week) as relief during these hours would be provided from the day shift RP staffing.

40 hours/week x 52 weeks/year x \$31.50 OT/hour = \$65,520 per year of non-overtime relief.

The cost of maintaining 2 RP Technicians on each shift is \$28,980 per year calculated as follows:

\$94,500 - \$65,520 = \$28,980