UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



| | | |
|---|---|---|
| In the Matter of | ) | |
| | ) | |
| DUKE POWER COMPANY, et al. | ) | Docket Nos. 50-413 |
| | ) | 50-414 |
| (Catawba Nuclear Station, Units 1 and 2) | ) | |

APPLICANTS' SECOND ROUND OF INTERROGATORIES TO CAROLINA ENVIRONMENTAL STUDY GROUP AND PALMETTO ALLIANCE REGARDING PALMETTO ALLIANCE'S AND CAROLINA ENVIRONMENTAL STUDY GROUP'S EMERGENCY PLANNING CONTENTIONS 1,3,6,7,8,9,11,14,15 AND 18

Pursuant to 10 CFR Section 2.740(b), Duke Power Company, et al. (Applicants) hereby serve Applicants' Second Round of Interrogatories upon Intervenors Palmetto Alliance and Carolina Environmental Study Group ("CESG") regarding Emergency Planning Contentions 1, 3, 6, 7, 8, 9, 11, 14, 15 and 18.

Each interrogatory shall be answered fully in writing, under oath or affirmation, and include all pertinent information known to CESG/Palmetto Alliance, its officers, directors, or members as well as any pertinent information known to its employees, advisors, representatives or counsel. In any case in which the answer by CESG is different from the answer by Palmetto Alliance, separate answers should be provided. In answering each interrogatory and in responding to each request, recite the interrogatory or request preceding each answer or response.

These interrogatories and requests shall be continuing in nature. Thus, any time CESG/Palmetto Alliance obtains information which renders any previous response incorrect or indicates that a response was incorrect when made, CESG/Palmetto Alliance should supplement its previous response to the appropriate interrogatory or request to produce.

In CESG's and Palmetto Alliance's response to Applicant's initial interrogatories it is stated that "As yet intervenors have held no conversations with prospective witnesses." CESG and Palmetto Alliance are requested to indicate when they expect to hold such conversations. It is requested that written summaries of those conversations be provided as a part of the continuing responsibilities to supplement answers to interrogatories.

Emergency Planning Contention 1

Please review the revised version of the public brochure, which is attached, and advise whether you are willing to withdraw Emergency Planning Contention 1. If not, please answer the following:

1-1. Do you contend that inclusion of greater detail on health effects in Applicant's revised brochure, "Catawba Nuclear Station Emergency Plan" would result in a better response by the public in the event the plan is activated?

1-2. Please explain the basis for your answer to the previous interrogatory.

1-3. What, if any, facts, studies or other references will you cite to support your answer to Interrogatory 2?

1-4. What, if any, information do you have which indicates that the State of North Carolina has not disseminated, or will not disseminate, information to inform the public of its planning for radiological emergencies?

1-5. Please explain with specific reference to the language in Applicant's revised brochure what portions are considered deceptive and/or misleading and why.

1-6. Do you contend that Applicant's revised brochure is not in compliance with 10 CFR 50.47(b)(7)?

1-7. If you answer Interrogatory 6 affirmatively, please provide the basis for your answer.

1-8. What, if any, information do you claim has been disseminated by Applicant or offsite response organizations "that radiation is not particularly harmful?"

Emergency Planning Contention 3

3-1. For how many potential evacuees do you contend that Applicant and offsite response agencies are responsible for making arrangements for uncontaminated food, clothing, and bedding?

3-2. Please explain the basis for your response to the previous interrogatory.

3-3. Are you aware that South Carolina has revised its plan for 14 reception/shelters and now proposes to utilize in excess of 100 shelters, to be opened on an as-needed basis? Do you consider the new Shelter Plan to be inadequate? If so, indicate the factual basis for your answer.

3-4. Upon what do you base your statement that persons from outside the evacuation area "might well proceed to a nearby reception center -- exacerbating problems of crowding . . .?"

3-5. How specific do you contend the plan must be with regard to controlling entry and exit from the shelters?

3-6. Do you contend that persons from outside the evacuation area should be excluded from shelters?

3-7. What is your definition of "overcrowding"? Do you know the guidelines as to the number of persons per square foot emergency agencies use in assessing shelter capacity? Do you disagree with these guidelines? If so, what figure do you accept? State what amount, if any, of additional space is needed at shelters for evacuees and provide the basis for your statement.

3-8. Do you contend that uncontaminated food, clothing, and bedding should be stored at the shelters? If so, for what percentage of the population should such supplies be stored? If not, how much time would you consider acceptable to accomplish delivery? Provide the basis for your answer.

3-9. Do you contend that those in charge will be unable to control entry into and exit from shelters? If so, what is the basis for such contention?

3-10. Do you contend that there are other shelters which are superior to the ones designated in the plans? If so, what are they? In what respects are other shelters superior?

3-11. In response to Applicant's initial interrogatory 2.b. on contention 3, CESG and Palmetto Alliance indicate reliance upon "Studies for evacuation in the event of nuclear war." The "OTA report" is referred to in this regard. To what specific OTA report is reference made?

Emergency Planning Contention 6(c)

6-1. Do you contend that contaminated persons will fail to go to shelters even when directed to do so?

6-2. If the response to No. 6-1 is affirmative, what is the basis for your response?

6-3. Do you contend that information provided or to be provided to the public by Applicant and by the States involved as to procedures for reporting to shelters is inadequate?

6-4. If the answer to Interrogatory 6-3 is affirmative, what corrective action do you contend is required?

6-5. What, if any, basis do you have for asserting that emergency plan procedures for registration, processing, shelter, and decontamination would not be followed by the general public?

6-6. Do you contend that registration at shelters should be mandatory? If so, what effect would this have on evacuation time and traffic flow?

6-7. What impact, if any, would purely voluntary registration at shelters have on evacuation time and traffic flow?

6-8. Do you contend that the level of contamination potentially available for EPZ residents would be sufficiently high to cause health effects? If the answer is affirmative, what is the basis for it?

Emergency Planning Contention 8

8-1. With regard to the North Carolina plan, what specific areas do you contend are lacking in the assignment of "clear and effective primary responsibilities for emergency response?"

8-2. With regard to the South Carolina plan, what specific areas do you contend are lacking in the assignment of "clear and effective primary responsibilities for emergency response?"

8-3. With regard to the plan for the County of Mecklenburg, what specific areas do you contend are lacking in the assignment of "clear and effective primary responsibilities for emergency response?"

8-4. With regard for the plan for the County of Gaston, what specific areas do you contend are lacking in the assignment of "clear and effective primary responsibilities for emergency response?"

8-5. With regard to the plan for the County of York, what specific areas do you contend are lacking in the assignment of "clear and effective primary responsibilities for emergency response?"

8-6. For each of the previous five interrogatories, state which specific supporting organizations you contend have not been assigned specific responsibilities.

8-7. Do you contend that there are specific primary or supporting responsibilities which should have been, but have not been, assigned to an offsite response organization, or should have been assigned to a different organization? If so, what are they? To whom do you contend each should be assigned?

8-8. What is the basis for your belief that there would be a lack of coordination among the various jurisdictions having responsibilities in the event of an emergency?

8-9. Do you recommend any specific changes to the existing plan of the State of North Carolina, the State of South Carolina, and the Counties of Mecklenburg, Gaston, and York to ameliorate conditions which may exist during the period between notification of State authorities of the existence of an emergency and their arrival at the EOC?

8-10. For what specific reasons do you contend the location of the forward emergency operations center is dangerous?

8-11. Please specify what you contend would be the best location for th forward emergency operations center and explain the basis for you answer.

8-12. In connection with a possible decision to order evacuation of all or pa of the plume exposure pathway EPZ, what particular consultative and/ delegative authority do you contend would cloud or impede the lines primary responsibility?

8-13. For which agencies, government, or organizations do you consider th to be a need for modification or clarification of assigned responsibil

Emergency Planning Contention 9

9-1. Do you contend that the information provided for handicapped persons in Applicant's revised brochure is inadequate?

9-2. If the response to Interrogatory 9-1 is affirmative, what corrective action do you contend is required?

9-3. What kinds of weather conditions would have impact on whether people can hear the sirens? How?

9-4. What, if any, factual basis is there for believing that the factor of distance would preclude sirens from being heard by persons within the EPZ?

9-5. What, if any, information do you have to show that Emergency Broadcasting Stations may not function as anticipated?

9-6. Do you propose that each and every EBS station have emergency backup power? Why?

9-7. What specific notification provisions do you contend are inadequate as to hospitals, prisons, recreation areas, and schools?

9-8. What specific additional notification provisions do you contend are required?

9-9. In reference to "etc." in paragraph "a", what other specific situations or factors are you contending could cause a person not to hear a siren?

9-10. Do the "warning sirens" to which you refer in part "a" consist only of fixed sirens or do they include those of any emergency vehicles that would travel routes in an area?

9-11. Do you consider the 10 db per distance doubled loss factor inadequate to account for the effects of weather and distance from sirens?

9-12. Do you consider the provisions in Applicant's revised brochure inadequate for alerting the hearing impaired? If so, explain why.

9-13. In part "c" of this contention, are you referring to the ability of radio and TV stations to operate when offsite power is lost to those stations or about the ability of area residents to hear a message at their home when power is out at the homes or both?

9-14. The response to Applicant's initial interrogatory 2.a. on contention 9 indicates "availability and reliability of components in the plan, unforeseen responses" as problems in notification. What specific components of the plan do you contend will not be available or reliable in notifying the public? What or whose unforeseen responses do you contend may hinder notification of the public?

9-15. In response to Applicant's initial interrogatory 2.b. on contention 9 you indicate "LERs and failures in military planning" as the grounds for your opinion that people will not be notified properly. Please cite specific references.

9-16. The response to Applicant's initial interrogatory 3.a. on contention 9 indicates "the several emergency planning documents sent to the parties by the Applicant" as the basis for concern in this area. List the specific documents relied upon. List any documents relied upon to place into contention the distance assumed by Applicant for siren coverage.

9-17. As you are now aware of the existence and content of Carowinds and PTL emergency plans, do you maintain your contention in this area? If so, what specific parts of the plans do you call into question?

9-18. The response to Applicant's initial interrogatory 4.c. on contention 9 states that, "there are circumstances in which people panic and do not act wisely.....". What documents or other studies do you rely upon to establish a basis for this assertion?

Emergency Planning Contention 11

11-1. Do you contend that the currently drawn plume EPZ boundary does not properly reflect local emergency needs and capabilities? If so, what specific needs and/or capabilities should be considered?

11-2. Do you consider the Charlotte/Mecklenburg All Hazards Plan an appropriate adjunct to the existing emergency plans for purposes of possible emergency response needs within the city limits of Charlotte? In what respects do you contend it falls short of meeting the needs or providing any necessary capabilities for radiological emergency response in Charlotte associated with Catawba Nuclear Station? Please explain the basis for your answer.

11-3. Please explain the manner in which you contend the flow of evacuees from the present plume EPZ through Charlotte gives rise to a need for evacuation planning within Charlotte.

11-4. What meteorological conditions do you contend justify extension of the plume EPZ to suitable boundaries within Charlotte city limits?

11-5. What boundary of the plume EPZ within Charlotte would you consider acceptable?

11-6. What demographic data do you contend justifies such an extension of the boundary of the northeast quadrant of the plume EPZ-

11-7. What access route conditions do you contend justify extension of the boundary of the northeast quadrant of the plume EPZ?

Emergency Planning Contention 14

14-1. Will you call the individual referred to in your contention as "Dr. Sheldon C. Plotkin"" as a witness? Will you offer any materials into evidence prepared by Dr. Plotkin? If so, please identify such materials.

14-2. What studies or other data do you rely upon to back up the claim that "voluntary" evacuation would take place outside the EPZ?

14-3. What percentage of the people would you consider an appropriate estimate of "voluntary", extra-EPZ evacuation? What is the basis for this percentage? What references, studies or other data support this percentage?

14-4. Which specific work and living habits do you consider to have been inadequately addressed in the time study?

14-5. What evacuation time will your witness estimate for peak Carowinds and Heritage Village crowds?

14-6. Please explain in detail how you arrived at a 33 hour evacuation time for the plume EPZ, giving all of the steps, factors, and assumptions and references for each involved in arriving at this estimate. Explain and provide any reference for your 600 vehicles/lane/hour figure. What percentage of the population do you estimate would be evacuated within 4 to 6 hours?

14-7. Please define what exactly you mean by "worst case conditions", whether you contend that such conditions may warrant alternative actions to evacuation and state what percentage of the time during a typical year conditions more favorable to more rapid evacuation than your worst case conditions would prevail.

Emergency Planning Contention 15

15-1. Do you have information on the number of families within the EPZ without vehicles? If so, please provide such information and indicate whether such families are without vehicles all of the time or only for part of the time. Please provide any such data as to Mecklenburg, Gaston and York Counties.

15-2. What, if any, changes in the State and Local emergency plans do you contend should be made to take into account the rural nature of large segments of these areas? What is the basis for your answer?

15-3. What, if any, changes should be made to State and Local emergency plans to take into account lower income communities which may exist within these areas? What is the basis for your answer?

15-4. What percentage do you contend should be utilized in the evacuation time studies as to the number of families without vehicles? What is the basis for your answer?

15-5. Do you contend that using school buses to provide transport for those without their own transportation is inadequate even when adult drivers are utilized? Please explain your answer.

15-6. What specific hospitals, nursing homes, and day care facilities do you contend may not have adequate transportation available for evacuation?

15-7. Do you contend that the State and Local plans should include measures to prevent parents from personally picking up their children from schools? What measures would you consider appropriate?

15-8. Can you cite any factual data on previous emergency evacuations to support your assertion that many citizens will likely not leave their homes when faced with a major threat? What basis is there for believing that Southerners or persons of a particular heritage (you refer to "Scotch Irishmen") are less likely to evacuate in the event of an evacuation order?

15-9. What specific counties or school systems do you contend lack adequate buses for evacuating school children? What is the basis for the alleged lack of adequate buses?

15-10. What specific bases do you have for believing that the State and Local emergency plans would not be effectively implemented to protect the residents of the areas in question?

Emergency Planning Contention 18

18-1. What studies or other data support your contention that local phone systems are inadequate to handle the volume of phone calls in an emergency? What assumptions have you made about essential versus nonessential use of telephones in the event of an evacuation order?

18-2. Do you contend that notification of emergency personnel should be accomplished by some other means than by telephone? Please explain your answer.

18-3. Do you contend that notification of school bus drivers should be accomplished by some means other than by telephone? Please explain your answer.

18-4. Do you contend that persons who have not informed authorities in advance that they will likely require transportation in the event of an emergency evacuation should have some means other than the telephone to request transportation? If so, what do you suggest?

18-5. Do you contend that transportation dependent persons will not make individual arrangements for evacuation as recommended in the revised brochure at p. 11, as follows: "If members of your family are sometimes at home without transportation, make these plans now."? If so, what is your basis?

18-6. Do you contend that all school buses should be equipped with two-way communication systems? Please explain.

Respectfully submitted,

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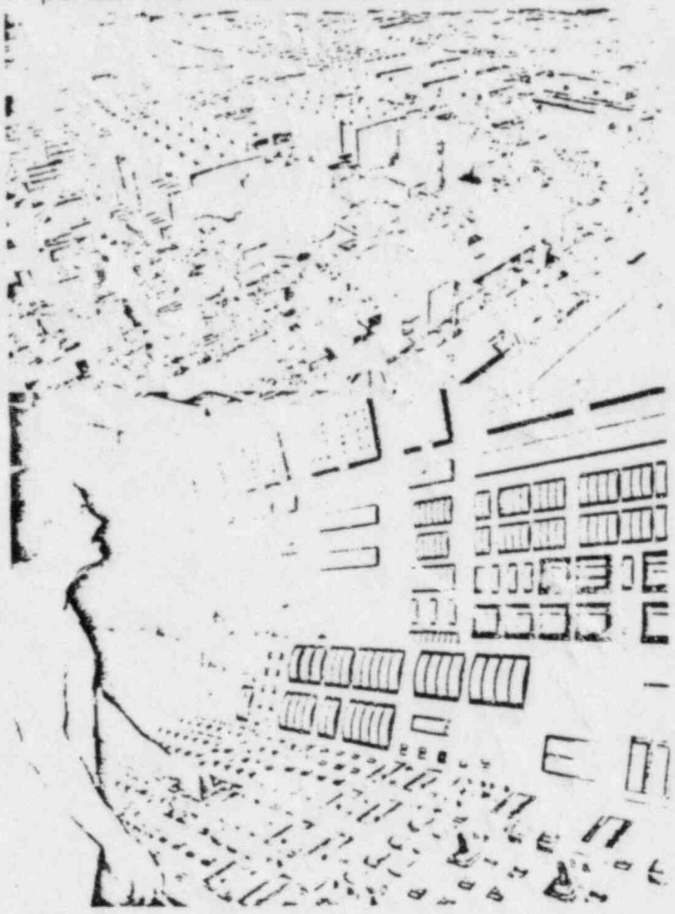
Attorneys for Duke Power Company, et al.

20 January, 1984

# Catawba Nuclear Station
# Emergency Plan

1984 Edition

Important information. Read and save this booklet.



## We Want You To Be Prepared

This booklet is an emergency plan for people who live within 10 miles of Catawba Nuclear Station. We expect the station to operate safely. But we want you to be prepared—to know what the sirens mean and what you should do if you hear them.

The plan was made by state and local government officials and Duke Power Company. **Keep this booklet in a place where you can find it.** This booklet will be updated each year.

We hope you will take time to read this booklet carefully and study the maps at the back. If your family is familiar with the plan, you will be prepared for an emergency. If you have questions, call your county emergency management office:

| | |
|---|---|
| York County Emergency Management | (803) 328-6171 ext. 225. 226 |
| Charlotte-Mecklenburg County Emergency Management | (704) 374-2412 |
| Gaston County Emergency Management | (704) 866-3303 |

## If You Hear A Rumor

On occasion there may be noises or activities at Catawba that prompt rumors in the area around the plant. If you ever hear a rumor about something supposedly going on at the plant, tell us immediately to get the facts. Don't repeat or act on rumor. You can get information by calling this number: (803) 324-5015 Rock Hill or (803) 831-2657 Lake Wylie.

## Special Help For The Handicapped

The emergency agencies listed above can notify and evacuate people with special needs during an emergency. If you are hearing impaired, or have a physical limitation, call your emergency agency today to tell them about your special needs. Use the phone number for your county listed above.

**Dear Neighbor:**

Duke Power Company has been producing electricity safely with nuclear power for more than 10 years. This year, the Catawba Nuclear Station will begin producing electricity. As part-owner and operator of the station, Duke Power wants you to know about the emergency plan for our area.

We want to make sure we have the best possible plan. Once a year, practice drills will be held to make sure the plan works. State and local agencies work with Duke Power on these drills.

It is very unlikely there would ever be a serious emergency at Catawba. But it is important for you to know what actions to take if there were an emergency. This booklet tells you.

If you know someone who is blind or who does not read well, read this information to them. Talk to them about what to do in an emergency.

If there is an emergency, listen only to emergency officials and your local radio and television stations. They will give you the right information. If they tell you to take actions different from the ones in this brochure, follow the instructions given at the time of the emergency.

We are committed to safely generating electricity to serve your needs. If you have questions about the Catawba station, call us at (803) 324-5015 Rock Hill, or (803) 831-2657 Lake Wylie.

Sincerely,

J. W. Hampton

Jim Hampton
Station Manager

## How It Works

The Catawba Nuclear Station uses steam to generate electricity. Steam pushes against the blades of a turbine to turn them. As the turbine spins, it turns a generator. The generator produces electricity.

Since Catawba is a nuclear station, it uses uranium as its fuel. Uranium atoms can be split apart. This process is called nuclear fission. When the atoms split, heat and fission products are produced. The heat is used to make steam. Some of the fission products are radioactive. The plant is designed to keep this radiation inside.

There are three separate systems of water at Catawba. Water in one system doesn't touch water in another system.

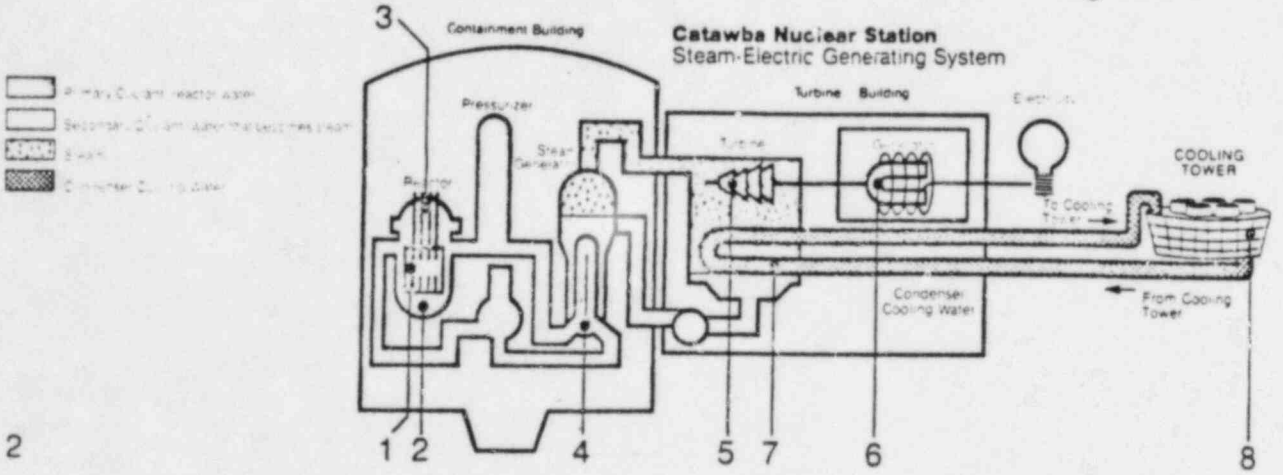
The first system is the primary water system (shown in green). It circulates around the nuclear fuel, called the core (1).

As it flows through the reactor (2), it heats to about 600° F. Because this water is under very high pressure, it does not boil. The amount of heat produced in the reactor is controlled by control rods (3). The reactor shuts down when the control rods are lowered.

The heated primary water next flows through u-shaped tubes in the steam generator (4). There it gives off its heat to water (dark blue) in the secondary water system. It is then pumped back to the reactor to be heated again.

Water in the secondary system is changed to steam (light blue) in the steam generator. The steam spins a turbine (5) connected to an electric generator (6) and produces electricity. As the steam leaves the turbine, it falls on pipes (7) carrying cooling water in the third system (yellow). This water comes from the cooling towers (8).

As the steam hits the outside of the pipes, it is changed back to water. It is then pumped to the steam generator to be heated to steam again. The steam heats the water inside the pipes. Before it can be used again, it must be cooled in the cooling towers.



## Catawba Nuclear Station

Two Units (1,145,000 kilowatts each)

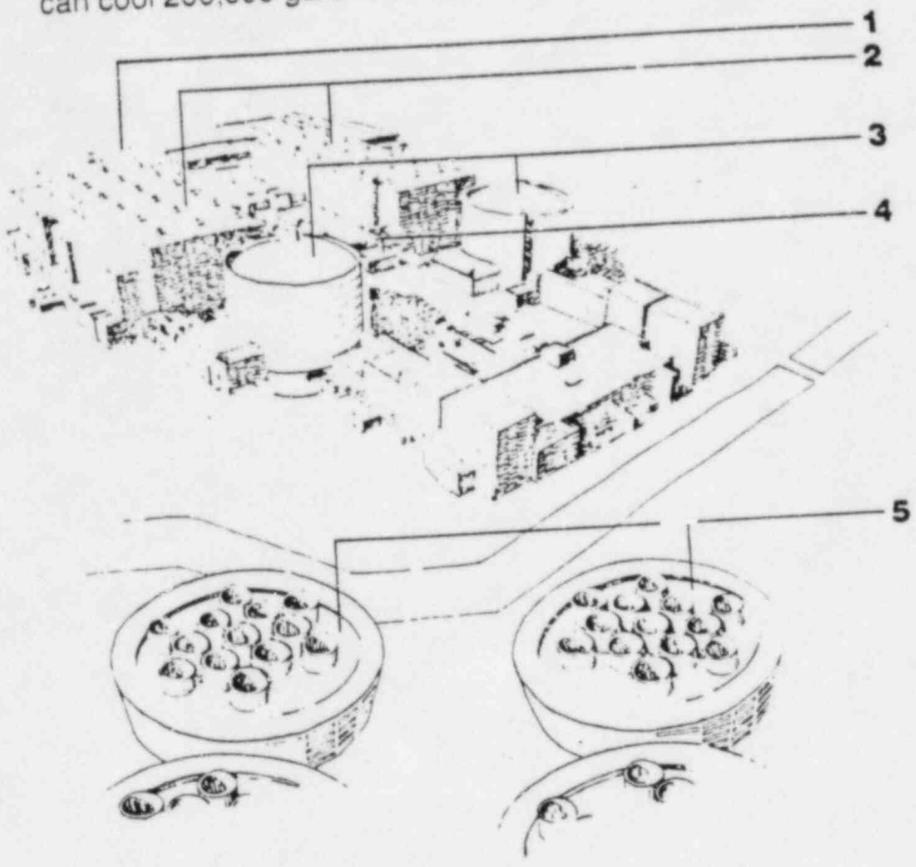
**1 Administration Building** contains security and plant offices.

**2 Turbine Building** contains the turbines, the generator and the condenser system.

**3 Containment Building** (or reactor building) is made of steel and reinforced concrete. It houses the reactor vessel, pressurizer, reactor coolant pumps, steam generators and other equipment. This building is designed to keep radiation inside.

**4 Auxiliary Building** houses the control room, equipment and laboratories for operation of the plant.

**5 Cooling Towers** cool the condenser cooling water to be used again. There are three cooling towers for each unit. Each tower can cool 200,000 gallons of water each minute.



## Radiation . . . A Fact Of Life

Radiation is energy. Radar, radio waves, ultraviolet (sun) rays and X-rays are common forms of radiation.

Radiation is all around us. It is in the air we breathe, in the food we eat and in our homes. It is even in our bodies. These sources of radiation are lumped together and called background radiation.

In addition to natural background radiation, there is also man-made radiation. It comes from such things as medical and dental X-rays and treatments. Very small amounts of radiation comes from the generation of nuclear power.

There are three types of radiation: alpha particles, beta particles and gamma rays. Alpha particles are the least penetrating. They can be stopped by a sheet of paper. Beta particles can be stopped by a thin sheet of metal. Gamma rays are the most penetrating. They can be almost completely stopped by three feet of concrete.

Radiation is measured in units called millirems. The average person receives about 180 millirems of background and man-made radiation a year. Each year we get more radiation from natural sources than we get from an operating nuclear plant. The chart on the opposite page shows how much radiation we get from different things. You can see an operating nuclear power plant adds very little to how much radiation we get.

If there were a major emergency at Catawba, people in areas near the plant could be exposed to high levels of radiation. Exposure to high levels of radiation causes health effects. For your protection, follow the instructions on the emergency broadcast stations.

If radiation were released, you could protect yourself by:

**1** Following the instructions given by the emergency broadcast radio or television station.

**2** If instructed, leave the area and check in at a shelter.

**3** If you are told to stay indoors, turn off fans, air conditioners, and forced-air heating units. Close all windows and doors.

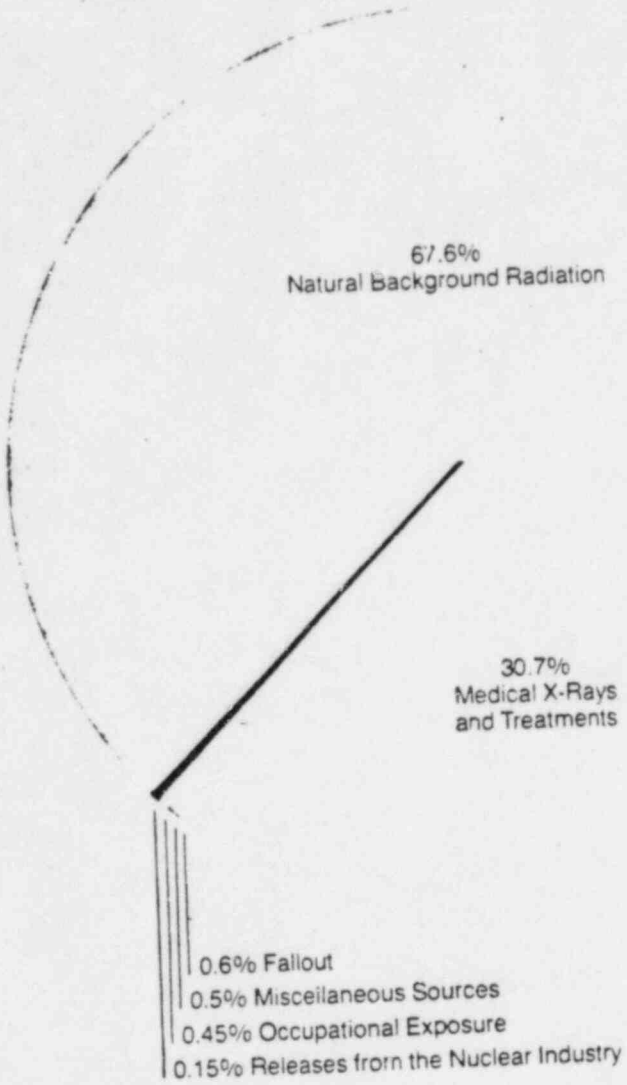
**4** Hold a damp cloth over your nose and mouth.

**5** Limit the amount of time you are outdoors.

Unborn babies and children up to six years old are more likely than other people to be harmed by radiation. Because of this, early precautions might be ordered for women who are, or could be, pregnant and very young children.

Most evidence shows radiation doses of 25 to 50,000 millirems do not cause permanent health effects. To be extra careful, protective actions would be ordered at much lower levels. This would provide you and your family more time to take shelter or, if necessary, to evacuate.

## Sources Of Radiation




**Sources and amounts of natural background radiation** *(Measured in Millirem per Year)*

| | |
|---|---|
| Cosmic Rays | 26 |
| Air-Food-Water | 24 |
| The Earth | 26 |
| Building Materials: | |
| Living in a brick house | 7 |
| Living in a stone house | 7 |

**Sources and amounts of man-made radiation** *(Measured in Millirem)*

| | |
|---|---|
| Dental X-Rays: | 40 |
| Bitewing series | 500 |
| Panoramic | 1 |
| Coast-to-Coast Airline Flight | 1 per year |
| Color Television | Less than 1 per year |
| Living Next to an Operating Nuclear Plant | |

## Nuclear Terms

**Chain Reaction** — The point in the fission process at which the production of neutrons in the reactor core is self-sustaining.

**Cold Shutdown** — The temperature of the water in the primary system is reduced below boiling point and the pressure is reduced to atmospheric pressure.

**Control Rods** — Rods made of a material that absorbs neutrons. When inserted into the nuclear fuel, the rods stop the fission process, shutting down the reactor.

**Core** — The central part of a nuclear reactor that contains the nuclear fuel.

**Emergency Core Cooling System** — A back-up emergency system designed to pump thousands of gallons of water into the reactor core to cool the fuel.

**Fission** — The nuclear process in which a heavy atom, such as uranium, splits into fragments.

**Fuel Assemblies** — A collection of rods that contain the nuclear fuel pellets which produce heat to make steam used to generate electricity.

**Fuel Pellets** — Thimble-sized uranium oxide pellets used in nuclear power generation. Each pellet contains about the same amount of energy as that produced from burning one ton of coal. A modern reactor core may contain up to 10 million pellets.

**Fuel Rods** — Hollow tubes 13 feet long that contain stacks of uranium oxide fuel pellets. These rods are bundled together to form fuel assemblies.

**Half-life** — The time required for a radioactive substance to lose one-half its radioactivity. Half-life can vary from minutes to years, depending on the substance.

**Maximum Permissible Dose (MPD)** — The legal limit to the amount of radiation a member of the public may be exposed to from any source. The Nuclear Regulatory Commission has established a maximum per person permissible dose of 500 millirems of radiation per year for the general public. For nuclear plant workers, the maximum has been established at 5,000 millirems per year.

**Millirem** — The unit used to measure radiation dosage. It is 1/1000th of a REM. REM stands for Roentgen Equivalent Man, a measure of radiation that indicates potential impact on human cells.

**Radioactivity** — The property possessed by some elements that give off energy in the form of waves or particles. Radiation may be alpha, beta or gamma.

**Reactor Trip** — The situation in which control rods are quickly inserted into the fuel core of the reactor, stopping the fission process.

## Emergency Classifications

One of the four classifications below would be used to describe a nuclear plant emergency. You should know these terms. Duke Power would contact federal, state and local authorities in each of the following situations.

**1** An **Unusual Event** is the least serious of the four warning classifications. It means there is a minor problem at the station that is being handled by plant workers. Because of strict federal regulations, a number of problems are reported as unusual events even though they pose no danger to the public. They would be reported to the Nuclear Regulatory Commission and to state and local officials. No release of radiation is expected. You will not have to do anything.

**2** An **Alert** is an event that could affect plant safety. Although there is still no danger to the public, county and state officials begin getting emergency operation centers ready in case the situation gets worse. You probably will not have to do anything.

**3** A **Site Area Emergency** is an event that could possibly affect the public. Small amounts of radiation could be released outside the station. The sirens are sounded to alert the public to listen to the emergency broadcast stations for information and instructions.

**4** A **General Emergency** is the most serious of the four classifications. State and federal authorities would take action to protect the public and station workers. Emergency broadcast stations would continue to give information and instructions. If necessary, some areas could be evacuated.

## Locating Your Zone

Look at the map on page 12 of this booklet. You will see the 10-mile area around Catawba Nuclear Station is divided into zones. **Find the zone where you live or work. Write it on the inside back cover of this booklet.** This way you will know if you live or work in the area affected by an emergency. For example, residents in zones A-1 and A-2 might be told to stay indoors. Others might not be affected.

Next turn to the protective action zones chart on page 13. Find the shelter for your zone. Locate it on the map of shelters on page 14. This is where you would go if an evacuation were ordered.

## How Would I Be Told About An Emergency?

If there were an emergency at the Catawba Nuclear Station, Duke Power would immediately tell state and county emergency organizations. These groups have plans to deal with any emergency at Catawba. They would tell you if any action is needed.

To warn you of an emergency, sirens in the 10-mile area around the station would go off.

A steady, three-minute signal would sound. Turn on your radio or television immediately. Tune to one of the emergency broadcast stations. These stations would give you information and tell you what you should do.

**The emergency broadcast stations for the area around Catawba are:**

**AM RADIO**

| | | |
|---|---|---|
| Belmont, NC | WCGC | 1270 |
| Charlotte, NC | WAME | 1480 |
| | WAYS | 610 |
| | WBT | 1110 |
| | WGIV | 1600 |
| | WHVN | 1310 |
| | WQCC | 1540 |
| | WSOC | 930 |
| Concord, NC | WEGO | 1410 |
| Dallas, NC | WAAK | 960 |
| Gastonia, NC | WGAS | 1420 |
| | WGNC | 1450 |
| | WLTC | 1370 |
| Kannapolis, NC | WGTL | 870 |
| | WRKB | 1460 |
| Kings Mountain, NC | WKMT | 1220 |
| Lincolnton, NC | WLON | 1050 |
| Monroe, NC | WIXE | 1190 |
| | WMAP | 1060 |
| Mooresville, NC | WHIP | 1350 |
| Rock Hill, SC | WRHI | 1340 |
| | WTYC | 1150 |
| York, SC | WBZK | 980 |

**FM RADIO**

| | | |
|---|---|---|
| Charlotte, NC | WBCY | 107.9 |
| | WEZC | 104.7 |
| | WFAE | 90.9 |
| | WROQ | 95.1 |
| | WSOC | 103.7 |
| Concord, NC | WPEG | 97.9 |
| Davidson, NC | WDAV | 89.9 |
| Gastonia, NC | WZXI | 101.9 |
| Kannapolis, NC | WRKB | 99.7 |
| Rock Hill, SC | WNSC | 88.9 |

**TV**

| | | |
|---|---|---|
| Charlotte, NC | WBTV | Ch. 3 |
| | WCCB | Ch. 18 |
| | WPCQ | Ch. 36 |
| | WSOC | Ch. 9 |
| | WTVI | Ch. 42 |
| Concord, NC | WUNG | Ch. 58 |
| Rock Hill, SC | WNSC | Ch. 30 |

In case of an emergency, fire, police and rescue units would also patrol the affected areas and sound their sirens.

## If I Hear The Siren, What Should I Do?

Go indoors immediately and tune to one of the emergency broadcast stations. Listen for instructions for your zone. You might be told to stay indoors or to evacuate. You might hear that your zone is not affected. Follow the instructions.

Use the telephone only for emergencies.

Even if there were an accident at Catawba Nuclear Station, it is not likely everyone within the 10-mile area would be affected. The areas affected would depend on such things as wind speed and wind direction. It would also depend on how serious the accident is.

If you hear no message on radio or television, call your county's emergency management office listed on the inside of the front cover.

## You Might Be Told To Stay Indoors

If you are told to stay indoors:

**1** Stay indoors until you are told it is safe to go out.

**2** Close all windows and doors. Turn off fans, air conditioners and forced-air heating units.

**3** Move to a basement if possible.

**4** Place a damp cloth over your nose and mouth.

**5** Listen to your local radio or television station for more instructions.

**6** Water, milk and food supplies will be monitored for potential contamination. The emergency broadcast stations will notify the public of any actions to be taken in regard to food and water.

## If You Are Ordered To Evacuate

If you are ordered to leave the area:

**1** Do not try to take all of your things with you. You could be away from home from a few hours to a few days.

**2** Turn off appliances and faucets. Lock all windows and doors.

**3** Hold a damp cloth over your nose and mouth. This would help keep radiation from entering your body.

**4** Provide food, water and shelter for your pets and livestock. Pets are not allowed at the shelters.

**5** Get into your car or other vehicle. Close all windows and vents. Drive to your shelter and register. You may stay at the shelter. Or after you register at the shelter, you may choose to stay with friends or relatives living at least 15 miles from the plant. Registering at the shelter will enable officials to contact you to tell you when you can go back home. You can also get information there while away from home.

## Exit Routes During An Evacuation

Look at the map and protective action zones chart at the back of this booklet to find your exit route. Exit routes would also be announced on radio and television. Police would help direct traffic during an evacuation. Use car pools if possible, to limit traffic. DRIVE SAFELY. Once outside the 10-mile area you would be directed to the shelter for your zone.

## Services Provided At The Shelters

**1** Representatives of organizations including Red Cross, Salvation Army and insurance companies would be at shelters to provide services you may need.

**2** Shelters would have facilities for decontamination of evacuees and their vehicles and personal items.

**3** Shelters would also provide food, water, clothing, medical help, beds, showers and toilets.

**4** Radioprotective drugs would be available if distributed by state authorities.

## Things You May Want To Take In An Evacuation

The shelters would have food, clothing and beds for you. Shelters would also have medical support and telephones. You might want to bring these things from home:

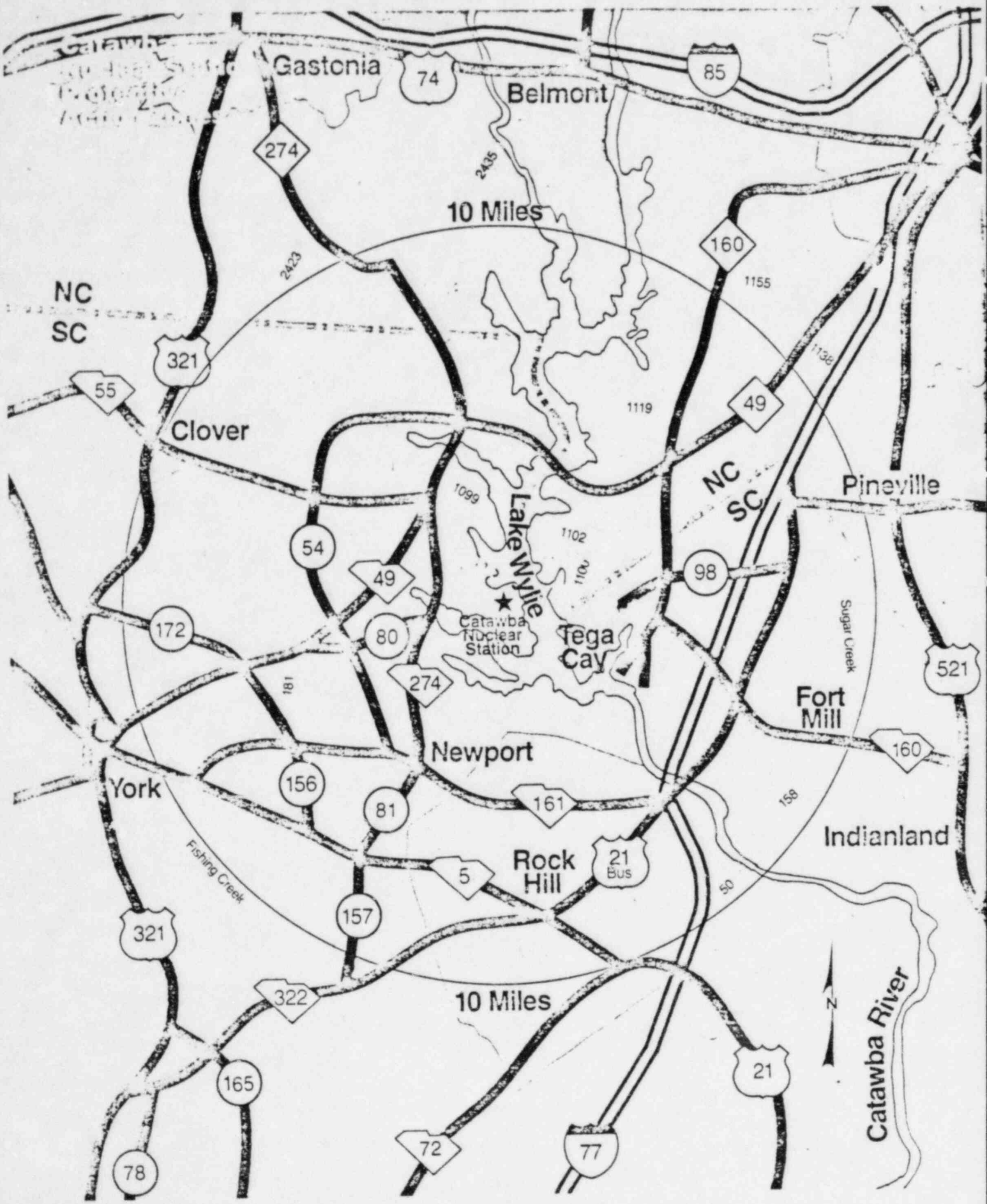
1. Two changes of clothing;
2. Two blankets or a sleeping bag for each person;
3. Important personal papers;
4. Toilet articles (soap, toothbrush and toothpaste);
5. Medical supplies (first aid kit, medicine and prescriptions);
6. Special baby formulas or food.

## What If My Children Are In School?

If an evacuation were ordered, children at schools within the emergency zone would be moved to the shelter for their school. It is important for parents to know what zone their children's school is in. You also should know what shelter they will be taken to. To find out, look at the map of zones and list of shelters at the end of this booklet. Write the zone for your children's school on the back of this booklet. Adults will stay with the children until parents pick them up. If your children ever spend time alone, you should tell them what to do in an emergency. Be sure they know what zone they are in.

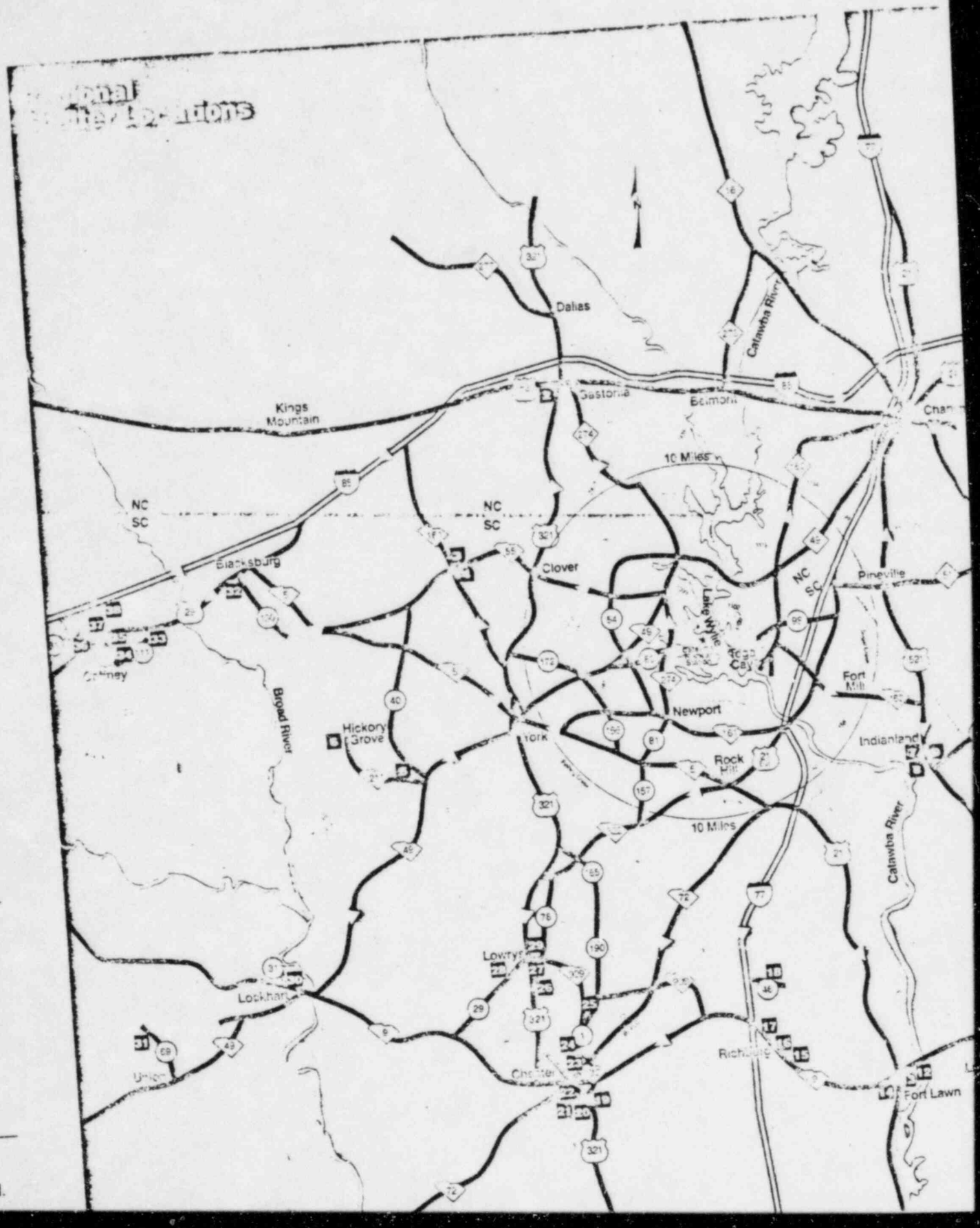
## What If I Don't Have Transportation?

If you or members of your family cannot drive or do not have any transportation, call the emergency agency in your area at the number listed on the inside front cover. You would be picked up. If members of your family are sometimes at home without transportation, make these plans now.


Gastonia
74
85
Belmont
274
2435
10 Miles
160
1155
2423
NC
SC
321
55
Clover
1119
49
1138
Pineville
1099
Lake Wylie
1102
54
49
98
Catawba Nuclear Station
Tega Cay
172
80
274
181
Sugar Creek
521
Fort Mill
160
Newport
York
156
81
161
158
Indianland
Fishing Creek
Rock Hill
21 Bus
5
157
321
50
322
10 Miles
165
21
72
77
78
N
Catawba River

| County | Zone | Primary Evacuation Routes | Shelters |
|---|---|---|---|
| Mecklenburg | **A-O** NC<br>**A-1**<br>**A-2**<br>**A-3** | 1. NC 49 or US 521 or NC 160 to I-77 North. I-77 North to I-85 North to NC 49, east to the shelter.<br>2. Or, NC 49 east to the shelter.<br>3. Or, NC 51 east to NC 16, north to I-85 North to NC 49 to the shelter. | UNCC 1 |
| Gaston | **F-3** | 1. NC 274 north to Garrison Blvd. West to the shelter. | Ashley Jr. High School 2 |
| York | **A-O** SC | 1. SC 55 west to SC 161, north to Bethany ARP Church.<br>2. Or, SC 55 west to Bethany Elementary School.<br>3. Or, SC 49 west to S-40, north to Sharon Elementary School.<br>4. Or, SC 49 west to SC 211, west to Hickory Grove School. | Bethany ARP Church 3<br>Bethany Elementary School 4<br>Sharon Elementary School 5<br>Hickory Grove School 6 |
| Lancaster | **B-1**<br>**B-2**<br>**C-1** | 1. SC 160 east to US 521, south to Indianland Elementary School, Indianland High School, and Indianland Vocational School.<br>2. SC 160 east to US 521, south to SC 9, west to Barr Street Jr. High.<br>3. SC 160 east to US 521, south to North Elementary School. | Indianland Elementary School 7<br>Indianland High School 8<br>Indianland Vocational School 9<br>Barr Street Jr. High School 10<br>North Elementary School 11 |
| Chester | **C-2** | 1. US 21 south to SC 9, east to Ft. Lawn-Springs Warehouse and Springs Cotton Division.<br>2. US 21 south to SC 9, west to Ft. Lawn Elementary School.<br>3. I-77 South to SC 9, east to Lewisville High School, Lewisville Middle School, and Lewisville Elementary School.<br>4. I-77 South to S-46, east to Lando Baptist church.<br>5. SC 72 south to SC 72 By-Pass, south to Southside Elementary School, Chester County Career Center, and Chester Senior High School.<br>6. SC 72 south to SC 72 By-Pass, south to US 321, north to Old National Guard Armory.<br>7. SC 72 south to Springs Mill-Eureka Plant.<br>8. SC 72 south to SC 909, west to S-190, south to Gethsemane Baptist Church.<br>9. SC 72 south to SC 132, west to S-1, north to York Road Elementary School.<br>10. US 321 south to S-78, north to Brown Chapel AME Zion Church and Christian Home Church.<br>11. US 321 south to S-29, south to North Chester Head Start School.<br>12. US 321 south to Lowry's Baptist Church. | Ft. Lawn-Springs Warehouse 12<br>Springs Cotton Division 13<br>Ft. Lawn Elementary School 14<br>Lewisville Elementary School 15<br>Lewisville Middle School 16<br>Lewisville High School 17<br>Lando Baptist Church 18<br>Southside Elementary School 19<br>Chester Co. Career Center 20<br>Chester Senior High School 21<br>Old National Guard Armory 22<br>Springs Mill-Eureka Plant 23<br>York Road Elementary School 24<br>Gethsemane Baptist Church 25<br>Christian Home Church 26<br>Brown Chapel AME Zion Church 27<br>North Chester Head Start School 28<br>Lowry's Baptist Church 29 |
| Union | **D-1**<br>**D-2** | 1. SC49 west to SC9, west to S-31, north to Lockhart School.<br>2. SC49 west to S-69, north to Union High Complex. | Lockhart School 30<br>Union High Complex 31 |
| Cherokee | **E-1**<br>**E-2**<br>**F-1**<br>**F-2** | 1. SC55 west to SC5, north to US29, west to S-100, south to Blacksburg High School.<br>2. SC55 west to SC5, north to US29, west to Cherokee Vocational School.<br>3. SC55 west to SC5, north to US29, west to SC18, south to Gaffney High School.<br>4. SC55 west to SC5, north to US29, west to SC18, south to S-111, east to East Jr. High School.<br>5. SC55 west to SC5, north to US29, west to S-89, north to West School.<br>6. SC55 west to SC5, north to US29, west to S-31, north to B.D. Lee Elementary School.<br>7. I-85 West to Luther Vaughn Elementary School. | Blacksburg High School 32<br>Cherokee Voc. School 33<br>East Jr. High School 34<br>Gaffney High School 35<br>West School 36<br>B.D. Lee Elementary School 37<br>Luther Vaughn Elem. School 38 |

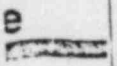
The shelters listed here have enough space for all North Carolina residents living within 10 miles of the nuclear station. There is enough space for one-third of all South Carolina residents who live within 10-miles of the plant. Additional shelters would be opened in York, Lancaster, Union, Chester, Cherokee and Fairfield counties for South Carolina residents if needed. People who arrive at a shelter that is full would be directed to one of the additional shelters.


Dallas
Kings Mountain
Gastonia
Belmont
Catawba River
10 Miles
NC
SC
Blacksburg
Clover
Pineville
Fort Mill
Newport
Rock Hill
Indianland
Hickory Grove
York
Broad River
Lowrys
Lockhart
Union
Chester
Richburg
Fort Lawn
10 Miles
Catawba River

d.

My zone is:

My children's
school zones are:




Catawba Nuclear Station
Duke Power Company
Clover, SC 29710

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD





| | | |
|---|---|---|
| In the Matter of | ) | |
| | ) | |
| DUKE POWER COMPANY, et al. | ) | Docket No. 50-413 |
| | ) | 50-414 |
| (Catawba Nuclear Station | ) | |
| Units 1 and 2) | ) | |

## CERTIFICATE OF SERVICE

I hereby certify that copies of "APPLICANTS' SECOND ROUND OF INTERROGATORIES TO CAROLINA ENVIRONMENTAL STUDY GROUP AND PALMETTO ALLIANCE REGARDING PALMETTO ALLIANCE'S AND CAROLINA ENVIRONMENTAL STUDY GROUP'S EMERGENCY PLANNING CONTENTIONS 1,3,6,7,8,9,11,14,15 AND 18" in the above- captioned matter have been served upon the following by deposit in the United States mail this 20th day of January, 1984.

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