# SYSTEM DESCRIPTION
# FOR
# RADIO CONTROLLED
# PROMPT ALERT AND NOTIFICATION SYSTEM
# FOR
# CATAWBA NUCLEAR STATION
# NEWPORT, S. C.

# TABLE OF CONTENTS

SYSTEM DESCRIPTION
PUBLIC NOTIFICATION SYSTEM
CATAWBA NUCLEAR STATION

## 1.0 SCOPE

The public notification system as required by 10CFR50 and NUREG-0654, Appendix 3 will be implemented using fixed sirens in the Emergency Planning Zone around the Catawba Nuclear Station. Large area warning systems are most economical and effective where the action necessary, once the siren is sounded, is simple and understood by the public. The public will be made aware of the purpose of the siren sounding which is notice to listen to the Emergency Broadcast System (EBS) radio or television station for specific information and instructions concerning the situation at the Catawba Nuclear Station. The Common Program Control Station (CPCS-1) is designated as WEZC-FM located in Charlotte, N. C. The sirens will be sounded in the "ALERT" (Civil Defense) signal mode which is a three (3) minute steady signal.

## 2.0 REFERENCES

NUREG-0654, Appendix 3/FEMA-REP-1, Revision 1, "Criteria for Preparation and Elevation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," (U. S. Nuclear Regulatory Commission, Washington, D. C. and Federal Emergency Management Agency, Washington, D. C.).

CPG-1-17, "Outdoor Warning System Guide," dated March, 1980 (U. S. Federal Emergency Management Agency, Washington, D. C.).

Guidance Memorandum #13, June 17, 1980 (U. S. Federal Emergency Management Agency, Washington, D. C.).

## 3.0 DESIGN CRITERIA

System design criteria is as follows:

3.1 Within fifteen (15) minutes of the State/County determination that public protective actions are necessary, provide Alert (sirens) and Notification (EBS) to the population within the Catawba Nuclear Station Emergency Planning Zone.

3.2 Provide a siren system with an acceptable dissonant sound level 10 dB above average daytime ambient background noise of 50 dB(a) for areas with a population below 2000 persons per square mile, and 10 dB above average daytime ambient background noise of 60 dB(a) for areas above 2000 persons per square mile. (Density to be determined in 1 mile radial, 22½° sectors.)

3.3 Locate sirens considering the demography, topography, and heavy industry within the area.

3.4 Limit siren sound level received by any person to less than 123 dB(c).

3.5 Limit siren sizes/models to 125 dB and 113 dB (dB(c) at 100 feet) to minimize the number of different models which simplifies the task of long-term support.

3.6 Use a conservative sound propagation loss factor of 10 dB per distance doubled to compute siren coverage. This results in the 125 dB model providing a 9050' radius coverage and the 113 dB model providing a 3950' radius coverage per Table 3.1 (Range calculated per the formula shown in Figure 3.1).

3.7 Radio-controlled tone activation from each county for those sirens within their boundaries.

3.8 Existing alerting equipment, such as Volunteer Fire Department sirens, will not be utilized in this primary system.

3.9 Provide adequate all-weather maintenance access.

3.10 Paint equipment to provide blending with the surroundings to minimize the prominence of the siren installation.

3.11 All equipment will be designed for a forty (40) year life in an outdoor environment with normal maintenance and parts replacement.

3.12 The siren equipment shall be capable of producing both the Civil Defense "Alert" (steady) signal and "Attack" (wavering) signal. The counties may actuate either of these two (2) signals with the proper encoder code selection.

3.13 The siren equipment will be designed to provide continuous duty (sized for continuous repetitive three (3) minute cycles).

TABLE 3.1

THEORETICAL SIREN COVERAGE/RANGE IN FEET WITH 10 dB LOSS PER DISTANCE DOUBLED

| Minimum Level Coverage in dB(c) | 125 dB(c) Rated Siren | 113 dB(c) Rated Siren |
|---|---|---|
| 85 | 1600' | - |
| 80 | 2250' | 1000' |
| 75 | 3200' | 1400' |
| 73 | 3700' | 1600' |
| 70 | 4500' | 2000' |
| 68 | 5200' | 2250' |
| 65 | 6400' | 2800' |
| 60 | 9050' | 3950' |

Note: All ranges rounded off to nearest 50 ft.

# RANGE CALCULATIONS

$$R_X = R_O \times 2^{\frac{L_O - L_X}{d}}$$

WHERE:

$R_X$ = RANGE IN FEET

$R_O$ = RANGE IN FEET WHERE SL* IS KNOWN

$L_X$ = DESIRED SL* AT RANGE $R_X$

$L_O$ = SL* AT RANGE $R_O$

d = LOSS IN dB PER DISTANCE DOUBLED

*SL = SOUND LEVEL IN dB (C)

FIGURE 3.1

## 4.0 SYSTEM DESCRIPTION

The Emergency Planning Zone (EPZ) around the Catawba Nuclear Station includes areas in York County, South Carolina and Mecklenburg County, and Gaston County, North Carolina.

The siren system network to provide a minimum of 60 dB(c) area coverage will consist of sixty-four (64) fixed siren locations as shown on Figure 4.1. Sixty-three (63) of this total will be of the 125 dB(c) siren rating each covering a 9050 feet radius area and the remaining one (1) will be 113 dB(c) rated covering a 3950 feet radius area. Table 4.1 lists additional siren siting information.

The sirens will be radio-controlled, tone actuated, for each of the counties for those sirens located within their boundaries. The counties will be provided with a tone encoder to be connected to an existing radio transmitter to be designated by county officials. York County will control forty-nine (49) sirens, Mecklenburg County will control ten (10) sirens, and Gaston County will control five (5) sirens.

The sirens will be located along existing highways and roads that traverse the Emergency Planning Zone. The major transportation routes for the 0-10 mile radius area are shown in Figure 4.2.

The siren installation will consist of the siren components (model dependent), a radio receiver/tone decoder, radio antenna, motor starter control box, and miscellaneous electrical service components. The mounting height of the siren horn assembly will be a minimum of fifty (50) feet above the ground with all siren and support components mounted on a wood pole.

Equipment from the pole top to the ground will be painted brown and the equipment above the pole top will be painted gray.

The proposed siren system provides reasonable assurance that coverage approaching the design objectives will be achieved. However, there are limitations in employing an outdoor warning system with the expectation of achieving 100 percent notification to the public. This is because of the many variables including weather conditions, tree foliage, local topography, and competing noise sources inside and outside dwellings. The majority of the people not alerted by the siren sound due to other noise sources or sound attenuation variables may well be watching TV or listening to radio. In that case the special emergency announcements made on the EBS radio and TV stations would attract their attention. Even with a higher level siren signal, there is a possibility that the system could not assure alerting everyone who is indoors in a high ambient noise area.

CATAWBA 1 & 2
PUBLIC NOTIFICATION SYSTEM - SIRENS
SITE INFORMATION TABULATION
01-10-83
Table 4.1

| SITE NO. | LOCATION | SIREN SIZE | MOUNTING HEIGHT | COVERAGE | UTILITY | PWR. SERVICE | LAND STATUS | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 1 | NC 49 (York Road) at Lake Shore Drive approximately .3 mile from Buster Boyd Bridge | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Mecklenburg County |
| 2 | SC 49 Just past Buster Boyd Bridge on right side near Hungry Fisherman Restaurant | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |
| 3 | Off SC 49 on road to River Hills rear entrance (west side Trans. R/W near River Hills Church) | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |
| 4 | Cook Road off SC 55 (approximately 150' from intersection) | 125 | 50' | 9050' | DP Co. | 240V 1Ø | Private | York County |
| 5 | SC 49 next to Crowder's Creek access area | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 6 | SC 274 near 500KV R/W (at road leading to Catawba Nuclear Station) | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 7 | SC 1099 at end of pavement (1.8 mile from Five Points) | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 8 | Intersection SC 49 & CR 114 | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 9 | Intersection CR 815 & 817 | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |

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CATAWBA 1 & 2
PUBLIC NOTIFICATION SYSTEM - SIRENS
SITE INFORMATION TABULATION
01-10-83
Table 4.1 (Continued)

| SITE NO. | LOCATION | SIREN SIZE | MOUNTING HEIGHT | COVERAGE | UTILITY | PWR. SERVICE | LAND STATUS | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 10 | SC 274 near Trans. R/W approximately 200 yards from intersection with CR 195 | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |
| 11 | Allison Creek Road, CR 1081 approximately 1 mile from SC 274 | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 12 | Off CR 1182 beyond Catawba Station entrance, left at pavement end on dirt road at 44KV R/W | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 13 | SC 195 across from China Grove A.M.E. Zion Church, approximately 300 yards from 195/658 intersection | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 14 | SC 658 (west side) approximately 200 south of Museum Road intersection | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |
| 15 | SC 195 at corner of Falconwood Road across from Lakewood Baptist Church | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 16 | SC 741 near Trans. Line R/W | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 17 | Tega Cay, Molokia Drive prior to Clubhouse entrance (right side of road 100' prior to transformer box). | 125 | 50' | 9050' | DP Co. | 240V 1Ø | Private Tega Cay | York County |

EL40101Y

CATAWBA 1 & 2
PUBLIC NOTIFICATION SYSTEM - SIRENS
SITE INFORMATION TABULATION
01-10-83
Table 4.1 (Continued)

| SITE NO. | LOCATION | SIREN SIZE | MOUNTING HEIGHT | COVERAGE | UTILITY | PWR. SERVICE | LAND STATUS | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 18 | SC 160 at rear entrance (gravel road) to Big Highway 160 junkyard | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 19 | McKee Road (CR 1102) at curve (east side) | 115 | 50' | 3950' | DP Co. | 240V 1Ø | R/W | Mecklenburg County |
| 20 | Snug Harbor Road at S8/9 gravel road | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Mecklenburg County |
| 21 | Corner Hamilton Road and Youngblood Road across from A.M.E. Zion Church | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Mecklenburg County |
| 22 | Carowinds Blvd. (1441) across from intersection with SC 22 (Carowinds side of road) | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |
| 23 | Westinghouse Blvd. across from Titan Building Products near fire hydrant | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Mecklenburg County |
| 24 | NC 160 across from Aplix Plant, approximately 300 yards from Sam Neely Road intersection | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Mecklenburg County |
| 25 | Sandy Porter Road (1142) at end of white fence approximately 500' from intersection with Brown Grier Road | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Mecklenburg County |
| 26 | Shopton Road west (1116) in curve at power pole with address 10220 marked | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Mecklenburg County |

EL40101Y

CATAWBA 1 & 2
PUBLIC NOTIFICATION SYSTEM - SIRENS
SITE INFORMATION TABULATION
01-10-83
Table 4.1 (Continued)

| SITE NO. | LOCATION | SIREN SIZE | MOUNTING HEIGHT | COVERAGE | UTILITY | PWR. SERVICE | LAND STATUS | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 27 | Shopton Road west at Winget Road (opposite side from road marker) | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Mecklenburg County |
| 28 | NC 273 just prior to trailer park at telephone pedestal #9 approximately ¼ mile from end of road | 125 | 50' | 9050' | York | 240V 1Ø | R/W | Gaston County |
| 29 | Pole Branch Road (177) approximately 1000' beyond bridge | 125 | 50' | 9050' | Ruthford Elect. | 240V 1Ø | R/W | Gaston County |
| 30 | Ratchford Road (2431) off 2485 about 200' from intersection | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Gaston County |
| 31 | NC 274 approximately 400' north of 2429/274 intersection across from "Curve" Road sign | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Gaston County |
| 32 | SC 435 ~ 200' from old grocery store | 125 | 50' | 9050' | York El. | 240V 1Ø | R/W | York County |
| 33 | SC 2427 & 564 | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | Gaston County |
| 34 | Intersection 64/27 next to gravel road | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |
| 35 | SC 557 south side of road beyond road to Amity Estates | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |

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CATAWBA 1 & 2
PUBLIC NOTIFICATION SYSTEM - SIRENS
SITE INFORMATION TABULATION
01-10-83
Table 4.1 (Continued)

| SITE NO. | LOCATION | SIREN SIZE | MOUNTING HEIGHT | COVERAGE | UTILITY | PWR. SERVICE | LAND STATUS | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 36 | Intersection 557/55 (northeast side) | 125 | 50' | 9050' | York El. | 240V 1Ø | R/W | York County |
| 37 | Clover, back of parking lot behind Clover Police/Fire Department | 125 | 50' | 9050' | DP Co. | 240V 1Ø | Private-Clover | York County |
| 38 | SC 64 across from gravel road .2 mile north of Johnson Branch Bridge | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 39 | SC 732 approximately 150' from intersection 732/738, north side of road | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 40 | SC 172 (north side) just past intersection 64/172 | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 41 | SC 819 near intersection 819/818 | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 42 | SC 161 past A.M.E. Zion Church near softball field backstop fence | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |
| 43 | York, at rear of DP Co. Retail Office parking lot | 125 | 50' | 9050' | DP Co. | 240V 1Ø | Private-DP Co. | York County |
| 44 | Intersection SC 1451/347 | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 45 | SC 195 across from DP Co. pole #36 | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |

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CATAWBA 1 & 2
PUBLIC NOTIFICATION SYSTEM - SIRENS
SITE INFORMATION TABULATION
01-10-83
Table 4.1 (Continued)

| SITE NO. | LOCATION | SIREN SIZE | MOUNTING HEIGHT | COVERAGE | UTILITY | PWR. SERVICE | LAND STATUS | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 46 | SC 5[illegible]2, near intersection of LR 1108 | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 47 | Rock Hill, intersection Rawlinson Road & SC 5 between two schools | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |
| 48 | Rock Hill, Friedheim Road at rear of Sunset Park Elem. School property | 125 | 50' | 9050' | Rock Hill Util. | 240V 1Ø | Rock Hill School Sys. | York County |
| 49 | Rock Hill, Spruce & Sylvia St. at Sylvia Elem. School near 3Ø power pole at dumpster | 125 | 50' | 9050' | Rock Hill Util | 240V 1Ø | Rock Hill School Sys. | York County |
| 50 | Rock Hill, Northside Elem. School (Anafrel St.), existing RH siren site | 125 | 50' | 9050' | Rock Hill Util. | 240V 1Ø | Rock Hill School Sys. | York County |
| 51 | Rock Hill, at Water Works Office on Columbia Ave. (corner of fence at parking lot) | 125 | 50' | 9050' | Rock Hill Util. | 240V 1Ø | Rock Hill R/W | York County |
| 52 | Rock Hill, Herlong Road at Village Shopping Center (existing RH siren site) | 125 | 50' | 9050' | Rock Hill Until. | 240V 1Ø | R/W | York County |
| 53 | Rock Hill, India Hook Road across from Ebinport Elem. School at Animal Clinic | 125 | 50' | 9050' | Rock Hill Util. | 240V 1Ø | R/W | York County |

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CATAWBA 1 & 2
PUBLIC NOTIFICATION SYSTEM - SIRENS
SITE INFORMATION TABULATION
01-10-83
Table 4.1 (Continued)

| SITE NO. | LOCATION | SIREN SIZE | MOUNTING HEIGHT | COVERAGE | UTILITY | PWR. SERVICE | LAND STATUS | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 54 | Rock Hill, Cherry Road at McNair St. (existing RH siren site) | 125 | 50' | 9050' | Rock Hill Util. | 240V 1Ø | Rock Hill | York County |
| 55 | Rock Hill, Dave Lyle Blvd. at Industrial Park Ent. (Garrisons and Gaskins Road) | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 56 | SC 21 across from Celanese Celriver Plant near road sign | 125 | 50' | 9050' | Rock Hill Util | 240V 1Ø | R/W | York County |
| 57 | Doby Bridge Road at corner of Williams Road | 125 | 50' | 9050' | DP Co. | 240V 1Ø | R/W | York County |
| 58 | Fort Mill, Massey Road next to Cook's Big A Auto Parts (near Water Tower & Fort Mill Ret. #1 substation) | 125 | 50' | 9050' | DP Co. | 240V 1Ø | Private-DP Co. | York County |
| 59 | Steele Road (Rt. 270) just past intersection with Merritt Road across from peach orchard entrance | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 60 | SC 160 at CR 49 & entrance to I-77 South access ramp (near telephone pedestal) | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 61 | Gold Hill Road (SC 98) near Trans. R/W approximately 300' from I-77 South ramp | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |

CATAWBA 1 & 2
PUBLIC NOTIFICATION SYSTEM - SIRENS
SITE INFORMATION TABULATION
01-10-83
Table 4.1 (Continued)

| SITE NO. | LOCATION | SIREN SIZE | MOUNTING HEIGHT | COVERAGE | UTILITY | PWR. SERVICE | LAND STATUS | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 62 | Bus. 21 near intersection with CR 1480 (side next to corn field) | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |
| 63 | Pineville, at Vol. Fire Dept. near southwest corner of building | 125 | 50' | 9050' | Pineville Util. | 240V 1Ø | Fire Dept. Pineville | Mecklenburg County |
| 64 | SC 5, prior to Fishing Creek (north side before curve) | 125 | 50' | 9050' | York | 240V 1Ø | R/W | York County |

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## 5.0 AREA POPULATION DISTRIBUTION

Several communities are located in the Emergency Planning Zone around the Catawba Nuclear Station. The larger communities include River Hills Plantation (approximately four (4) miles north), Tega Cay (approximately two (2) miles southeast), Lakewood (approximately three (3) miles south), and Newport (approximately five (5) miles southwest). Note Table 5.1 from the Final Safety Analysis Report for Catawba projecting 11,859 people in 1981 in the 0-5 mile radius area of 78.5 square miles. This yields approximately 150 persons per square mile which is well below the "rural" classification of 2000 or less people per square mile.

In the 5-10 mile area of the EPZ are the cities of Rock Hill, York, Clover, Pineville, and Fort Mill. For alerting purposes, each of the city limit areas are considered above 2000 persons per square mile although portions of Rock Hill are the only areas above that figure at this time.

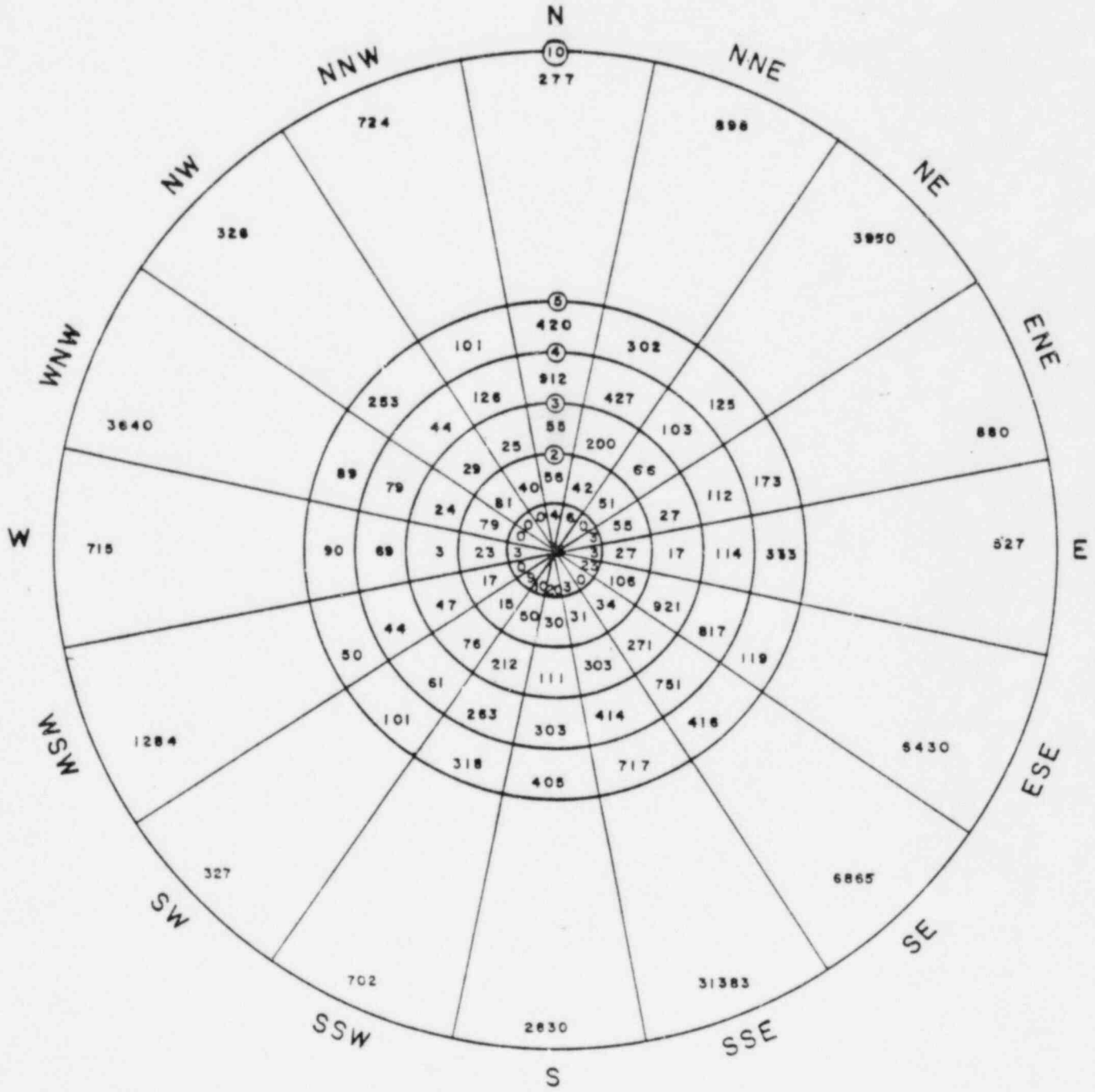
TABLE 5.1
Catawba Nuclear Station
1981 Projected Population Distribution

0-10 Miles (0-16.1 km)

| SECTOR | 0-1 MILE | 1-2 MILES | 2-3 MILES | 3-4 MILES | 4-5 MILES | 5-10 MILES | TOTAL |
|---|---|---|---|---|---|---|---|
| N | 4 | 56 | 55 | 912 | 420 | 277 | 1,724 |
| NNE | 6 | 42 | 200 | 427 | 302 | 898 | 1,875 |
| NE | 0 | 51 | 66 | 103 | 125 | 3,950 | 4,295 |
| ENE | 3 | 55 | 27 | 112 | 173 | 880 | 1,250 |
| E | 3 | 27 | 17 | 114 | 333 | 527 | 1,021 |
| ESE | 23 | 106 | 921 | 817 | 119 | 6,430 | 8,416 |
| SE | 0 | 34 | 271 | 751 | 416 | 6,865 | 8,337 |
| SSE | 3 | 31 | 303 | 414 | 717 | 31,383 | 32,851 |
| S | 20 | 30 | 111 | 303 | 405 | 2,830 | 3,699 |
| SSW | 10 | 50 | 212 | 263 | 318 | 702 | 1,555 |
| SW | 9 | 15 | 76 | 61 | 101 | 327 | 589 |
| WSW | 0 | 17 | 47 | 44 | 50 | 1,284 | 1,442 |
| W | 3 | 23 | 3 | 69 | 90 | 715 | 903 |
| WNW | 0 | 79 | 24 | 79 | 89 | 3,640 | 3,911 |
| NW | 0 | 81 | 29 | 44 | 253 | 326 | 733 |
| NNW | 0 | 40 | 25 | 126 | 101 | 724 | 1,016 |
| TOTAL | 84 | 737 | 2,387 | 4,639 | 4,012 | 61,758 | 73,617 |

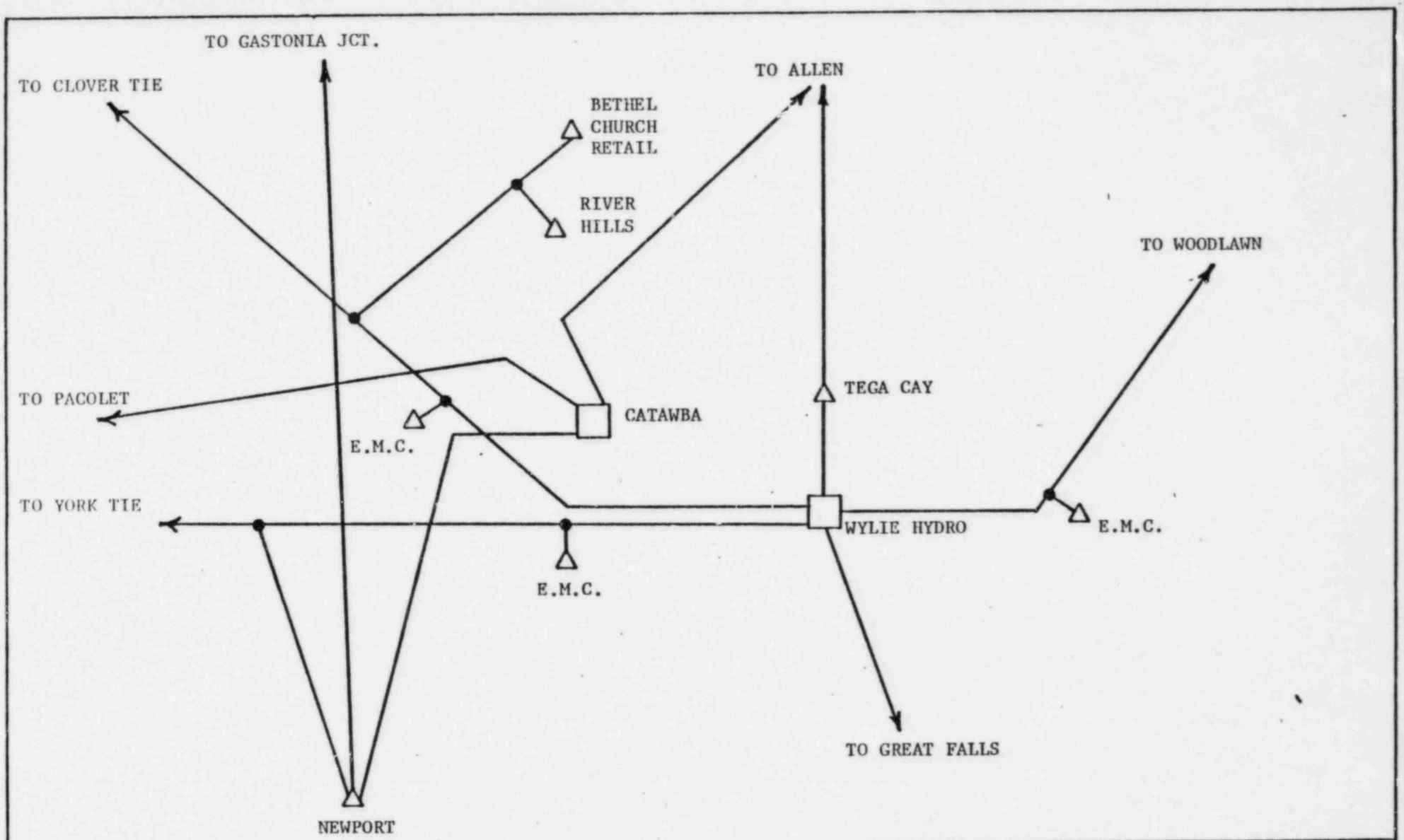
# FIGURE 5.1

| | | CUMULATIVE | |
|---|---|---|---|
| 0 - 1 MILE = | 84 | 1 MILE = | 84 |
| 1 - 2 MILE = | 737 | 2 MILE = | 821 |
| 2 - 3 MILE = | 2,387 | 3 MILE = | 3,208 |
| 3 - 4 MILE = | 4,639 | 4 MILE = | 7,847 |
| 4 - 5 MILE = | 4,012 | 5 MILE = | 11,859 |
| 5 - 10 MILE = | 61,758 | 10 MILE = | 73,617 |



## 6.0 POWER DISTRIBUTION AND RELIABILITY

The electrical power distribution for the siren system is very reliable as shown on Figure 6.1. The power is derived from more than five (5) power stations in the EPZ vicinity and flows in from at least five (5) directions. In addition to this redundancy, the more than six (6) substations within the area are interconnected. The loss of an individual substation or power source would not result in a total siren system failure.




| CATAWBA NUCLEAR POWER STATION | |
|---|---|
| POWER DISTRIBUTION GRID | |
| DRAWN BY: K.A. YORK<br>DATE: 4-19-82 | FIGURE NO.<br>6.1 |

## 7.0 SYSTEM CONTROL

The siren system will be radio-controlled from each county using an existing county selected radio frequency. A tone encoder will be installed in the county communications center which provides specific tones and timing sequences to be sent to the transmitter. The tone encoder requires a key to enable its functions. These siren sites within the county boundaries will actuate in the selected mode as the tones are received and decoded at each site. Radio control tone commands include three separate codes which are "Alert", "Attack", and "Cancel". The "Alert" code activation will produce a three (3) minute steady signal or shorter if the "Cancel" code is sent. Only the "Alert" and "Cancel" commands are used for the Catawba EPZ procedures. The county may elect to use the "Attack" mode for other purposes.

Local manual controls are provided at each siren site within locked enclosures for maintenance and checkout purposes.

County emergency preparedness authorities having system activation responsibility are as follows:

York County

Mr. James L. Carroll, Director, York County Emergency Management located in York, S. C.

Mecklenburg County

Mr. Kenneth Williams, Director, Civil Preparedness located in Charlotte, N. C.

Gaston County

Mr. Robert Phillips, Director, Gaston County Emergency Management Agency, Gastonia, N. C.

## 8.0 SYSTEM TESTING AND MAINTENANCE

The tests listed per Table 8.1 will be routinely performed on the indicated schedule to insure siren system reliability and operational readiness.

The Silent test will be conducted by the county control center personnel.

The quarterly Growl test will normally be performed by Duke Power Company personnel locally at each siren site. County personnel will also be required if the Growl test is conducted remotely from the control center. Additionally, during this test, normally conducted locally at the siren site, the mechanical counter recording the number of silent tests will be confirmed.

The annual full cycle test will be conducted during the formal preparedness exercise and will be a cooperative effort of all involved.

Preventive and corrective maintenance for the siren system will be provided by Duke Power Company personnel. Optionally, the tone encoders at the county control centers may be maintained as part of the transmitter equipment by county contracted personnel.

SYSTEM TESTING AND MAINTENANCE
TABLE 8.1

| TEST | | FUNCTIONS TESTED | PROCEDURE | SCHEDULE |
|---|---|---|---|---|
| 1. | SILENT | Transmitter, tone encoder, receiver/ decoder, and mechanical counter. | Activate tone encoder and enter "Cancel" code, depress "Page" button, deactivate tone encoder once LED display decimal point goes out (approxi- mately 6-10 seconds). | Every two weeks, log entry. |
| 2. | GROWL | All system components except 3 minute timer, transmitter, and encoder. | Activate locally at each siren site using test transmitter/encoder. Manually cancel within a few seconds after activation. | Quarterly and during PM. |
| 3. | FULL CYCLE | All components except "Cancel" tone and mechanical counter. | Activate tone encoder and enter "Alert" code, depress "Page" button to send, wait until decimal point goes out, deactivate encoder. | Annually during formal exercise. |
| 4. | PM (Preventative Maintenance). | All components. | Per manufacturers instructions. | Annually. |