

PDR
LPDR
NSIC
NTISPOWER AUTHORITY OF THE STATE OF NEW YORK
10 COLUMBUS CIRCLE, NEW YORK, N.Y. 10019CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
4 IRVING PLACE, NEW YORK, N.Y. 10003

July 24, 1981

Mr. Boyce H. Grier, Director
Office of Inspection and Enforcement
Region I
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406Subject: Indian Point Unit Nos. 1 and 2
Docket Nos. 50-03 and 50-247Indian Point 3 Nuclear Power Plant
Docket No. 50-286Prompt Notification and Instructions to
the Public in the Event of an Emergency

Dear Mr. Grier:

In response to your letter dated July 1, 1981 regarding prompt notification instructions to the public in the event of an emergency the Power Authority of the State of New York (Authority) and Consolidated Edison Company of New York, Inc. (Con Edison) provide the following information.

The Authority and Con Edison are in the process of providing to the four counties surrounding the Indian Point Site (Westchester, Orange, Putnam and Rockland Counties) an alert and notification system (ANS). This system has been designed to alert the public within the 10-mile Emergency Planning Zone (EPZ) in the event of an emergency as required by 10 CFR 50 Appendix E, Section IV D.3.

This system has been designed to utilize eighty-eight pole-mounted sirens. These have been purchased and are being installed in the four counties that surround the Indian Point Site. An initial priority has been placed on installing sirens within the 0-5 mile radius surrounding the Indian Point site.

Extensive mapping studies, site selection surveys, and location evaluations have been completed and installation permits for each siren location are being obtained. Pole installation started on July 13, 1981, siren delivery began on July 22, 1981 and the first siren was put in place in Buchanan, N.Y. on July 23, 1981. In addition, thirty-three of the eighty-eight required installation permits have been secured and pole installation is proceeding expeditiously.

As discussed in our respective letters to you addressing the FEMA Comments, dated May 26, 1981, existing local fire and police sirens and public address systems will be used to notify the public within the 10-mile EPZ until the installation of the alert and notification system is completed. These compensatory measures were agreed upon by civil defense officials of the four counties surrounding the Indian Point site at an April 27, 1981 meeting, reconfirmed at a July 9, 1981 meeting, and will be used until the ANS is implemented. The appropriate county procedures are being revised to incorporate these compensatory measures. These procedures will be included in the next revision to the County Radiological Emergency Response Plans which will be submitted to FEMA by August 22, 1981.

The compensatory emergency notification activities described above will alert and instruct the public to tune to the appropriate Emergency Broadcast System radio stations for further instructions and information during a postulated site area or general emergency. We are advised by New York State radiological emergency planning officials that local Emergency Broadcast System radio stations would broadcast messages, at the request of New York State Office of Disaster Preparedness, to promptly provide the public with instructions.

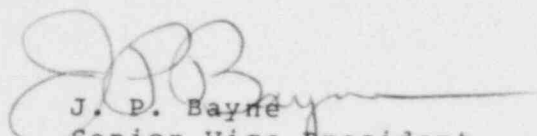
The following attachments provide the additional information requested in your July 1, 1981 letter:

1. Attachment A - Schedule for Installation of Alert and Notification System (ANS).
2. Attachment B - Description of the Alert and Notification System (ANS).

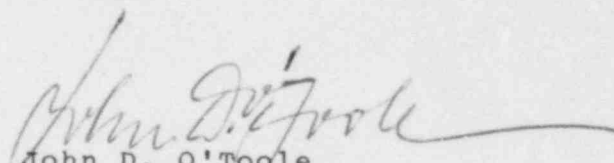
3. Attachment C - Problems Hindering Installation of the Alert and Notification System.

Should you or your staff have any questions, please contact us.

Very truly yours,



J. P. Bayne
Senior Vice President
Power Authority of the State
of New York



John D. O'Toole
Vice President
Consolidated Edison Company
of New York, Inc.

cc: Mr. Brian Grimes, Director
Division of Emergency Preparedness
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. T. Rebelowski
Resident Inspector
U. S. Nuclear Regulatory Commission
P.O. Box 38
Buchanan, N.Y. 10511

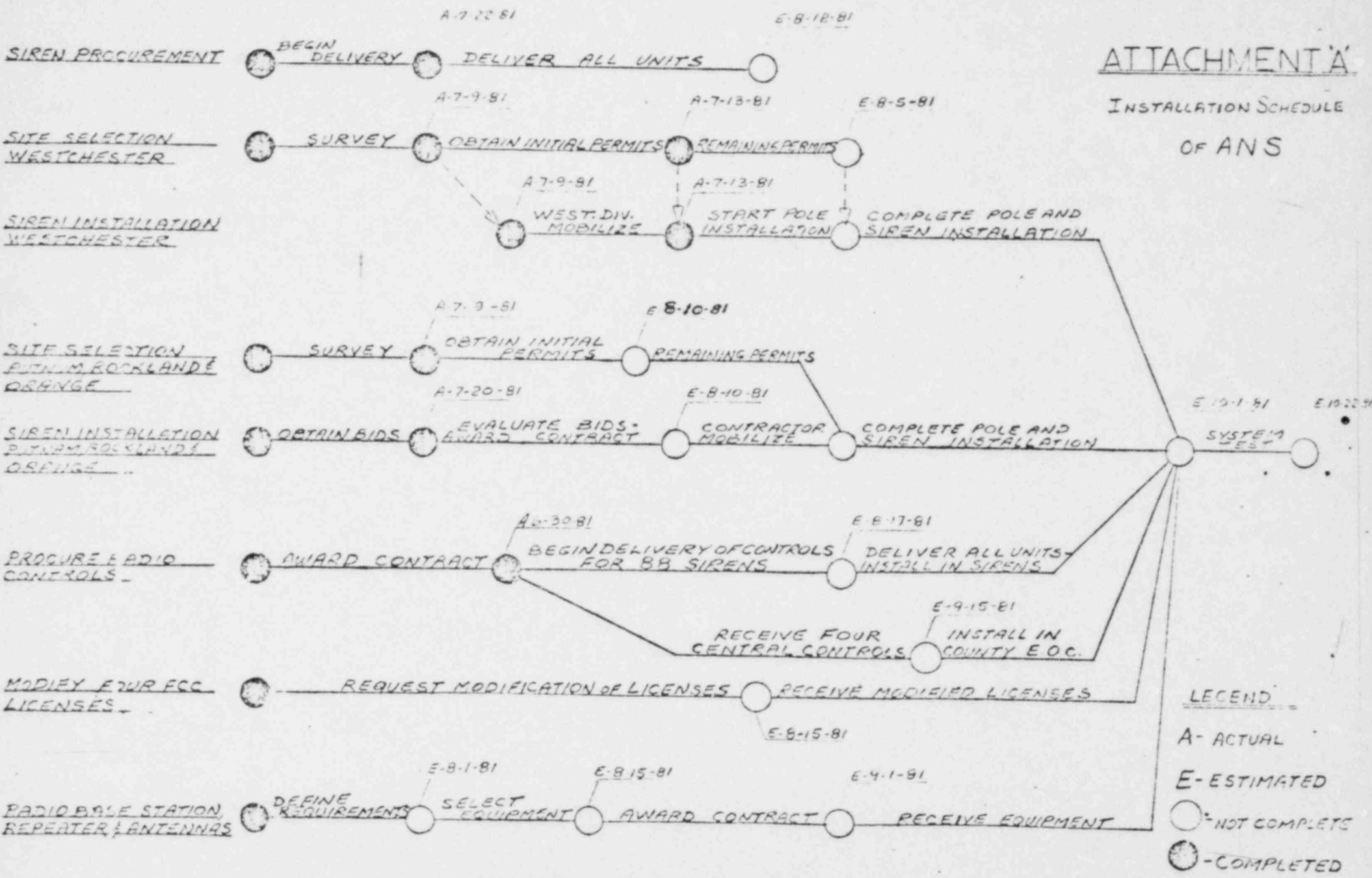
ATTACHMENT A

Schedule for Installation of
ALERT AND NOTIFICATION SYSTEM (ANS)

The schedule which is provided constitutes the licensees present best estimate of the implementation schedule for the prompt notification system. The schedule assumes that our continuous contact with consultants, suppliers, contractors and constructors will be effective in resolving presently unforeseen problems without experiencing program delays. It also assumes that the response to permit requests and FCC license applications will be consistent with our past experience with similar requests.

ATTACHMENT A

INSTALLATION SCHEDULE OF ANS



LEGEND

- A - ACTUAL
- E - ESTIMATED
- - NOT COMPLETED
- - COMPLETED

ATTACHMENT B

Description of the Alert and Notification System (ANS)

1. INDIAN POINT ANS DESIGN

The design of the Indian Point ANS has been developed using 125 dB(C) electro-mechanical sirens, with either digital control or analog dual-tone control depending on the radio frequency available. This selection is based upon the design criteria and evaluation discussed in section 3 of this attachment. The system configuration is as follows:

- Siren - Alerting Communicators of America (ACA) Penetrator siren 125dB(C) rated, directional, either 3-phase/208 or 1-phase/240, with ACA custom control

- Siren Control Decoder - Plectron H9 analog decoder/timers for Putnam and Rockland Counties, and Motorola C1560 one-way digital control units for Westchester and Orange Counties

- Central Station - Plectron G8D for Putnam and Rockland Counties and Motorola C1565 for Westchester and Orange Counties

NOTE: For the Plectron units a dual audible and a subaudible tone will be employed.

The design study indicated that 88 125dP(C) sirens are required. The siren locations were based upon:

- (1) population distribution;
- (2) topography;
- (3) suitable pole locations;
- (4) availability of electric power;
- (5) radio reception

The distribution of sirens in terms of the four counties is:

Westchester	-	44
Rockland	-	23
Orange	-	12
Putnam	-	9

The topographic maps of Appendix A identify siren locations which provide the required coverage. Specific site selection is based upon a site survey evaluation at each location and is finalized at the time the installation permit is obtained from the village, town, county or state.

The sirens in each county will be controlled from the respective County Emergency Operations Center (EOC). The location of the County EOCs are:

- o Rockland County EOC
Rockland County Fire Training Center
Fireman's Memorial Drive
Pomona, New York 10970

- o Orange County CD EOC
Orange County Government Center
225-275 Main Street
Goshen, New York 10924

- o Putnam County CD EOC
Putnam County Office Building
Main Street
Carmel, New York 10512

- o Westchester County CD EOC
Westchester County Office Building
Sub-Basement Area
Martine Avenue
White Plains, New York 10601

Communication from the EOCs to the sirens will be via radio links using existing County frequencies.

Westchester	-	Local Government
Rockland	-	Highway
Orange	-	Local Government
Putnam	-	Fire

2. Testing

The following tests will be performed in compliance with NRC/FEMA requirements:

Silent Test - This test checks the communication and control system of the alerting device at each siren simultaneously without activating the sound generating mechanism. A counter advances at each siren each time the test is performed. Inspection of the counter advance confirms that the receiver and the decoder at the siren as well as the transmitter and encoder in the control center are operating correctly.

Growl Test - This test activates the siren until the alerting sound is produced at an output level much lower than the rated output level. This test verifies the functioning of the sound generating mechanism. The test is performed by depressing of a button located on the siren control panel. The siren signal continues for the duration of button depression.

Complete Cycle Test - This test activates the siren at full rated output. This is a full test of all components.

3. ANS DESIGN CRITERIA

A comparative evaluation of alternative alerting devices was performed. It was concluded that high-powered electro-mechanical sirens are the most effective primary alerting devices for the ten-mile radius EPZ surrounding Indian Point. The criteria for defining siren coverage are described below.

Siren Coverage Criteria - The coverage, in terms of covering radius R, of a high-powered siren with a rated output L_0 (at 100 feet) is given by:

$$L_0 = L_R + A(R)$$

where

L_R = required C-weighted outdoor sound level of a siren at the maximum range R, i.e., the minimum C-weighted siren sound level required in the area to be covered.

$A(R)$ = attenuation of siren sound level between R and the 100 foot reference point.

Criteria for the selection of L_R and $A(R)$ are presented below.

Siren Sound Level Requirements Criteria - The following guidelines on the siren sound levels requirements for the Indian Point ANS were used:

1. For non-residential areas, sirens will be placed so that 60 dB(C) will be the minimum outdoor siren sound level in the area.

2. For residential areas with population density below 2000 persons/square mile, sirens will be placed so that 65 dB(C) will be the minimum outdoor siren sound level in the area. This will provide effective indoor as well as outdoor coverage.
3. For populated areas with population density above 2000 persons/square mile and for cities, sirens will be placed so that 75 dB(C) will be the minimum outdoor siren sound level in the area for effective indoor as well as outdoor coverage.

Propagation Loss Criteria - For the purposes of system design, the attenuation of the siren signal A(R) as a function of distance R is defined in terms of only "fixed losses" made up of:

- (i) Spherical spreading loss;
- (ii) Atmospheric absorption (including, where appropriate, attenuation by fog and scattering by atmospheric turbulence);
- (iii) Absorption by ground surfaces, for propagation in rural areas;
- (iv) Reflection and diffraction by buildings in urban and suburban areas;
- (v) Barrier attenuation by hills, when applicable. Variable effects of wind and temperature gradients on sound propagation are accounted for, as a first approximation, by utilizing average measured data for "fixed losses" where the averages of the variable effects are inherently included.

Spherical spreading loss (at 6 dB/distance doubled) is a basic physical phenomenon of sound propagation independent of the sound propagation path. The only propagation losses unique to the 10-mile EPZ for the Indian Point Site are those due to

atmospheric absorption and barrier attenuation. The estimates of ground attenuation are based on the evaluation of siren ranging test data reported in the literature. Attenuation by ground surfaces or obstacles is defined in terms of average values appropriate for rural, suburban, and urban areas. Propagation losses for rural, suburban and urban areas were assumed for the design of this system.

Figure 3-1 presents a summary of the propagation loss of the sound level of a 125 dB(C) siren for urban and residential suburban areas. The Indian Point 10-mile EPZ is predominantly rural and residential suburban. From Figure 3-1, for such areas, 10 dB loss per distance doubled provides a conservative estimate of the propagation loss. Spherical spreading loss is 6dB per distance doubled. The contribution to propagation loss due to factors (ii) through (v) above is approximately 4 dB/distance doubled.

Propagation loss using actual environmental data from the Indian Point EPZ is found to be less than that given by the 10 dB loss/distance doubled rule. For the worst case condition air absorption loss (average maximum temperature of 75°F in July and relative humidity of 54%), the air attenuation loss is 0.64 dB/1000 feet. (For computational procedure, see American National Standard SI.26-1978, "American National Standard Method for the Calculation of the Absorption of Sound by the Atmosphere".) For distances less than 10,000 feet, this loss contributed rather insignificantly to the total loss predicted by the 10 dB loss/distance doubled rule.

Summary - In conclusion for the design of the Indian Point ANS, 10 dB loss/distance doubled is used as the criterion for propagation loss. Using this criterion the coverage, radius R, for a siren of rated output L_0 (at 100 feet) can be derived. For example, for a siren of 125 dB(C) (at 100 feet), the covering radius is:

1. For non residential areas, R = 9050 ft.;
2. For residential areas with population density below 2000 people/square mile, R = 6400 ft.;
3. For areas with population density above 2000 people/square mile, R = 3200 ft.

Siren Mounting Height Criteria - According to NRC/FEMA guidelines, the maximum siren sound level for any listener should be no more than 123 dB(C), in order to avoid the risk of hearing-related injuries. This requirement is achieved by mounting the siren high above ground level. Figure 3-2 presents the typical mounting height required to satisfy the 123 dB(C) requirement as a function of rated siren sound output. For a siren rated at 125 dB(C), the minimum mounting height should be 52 feet.

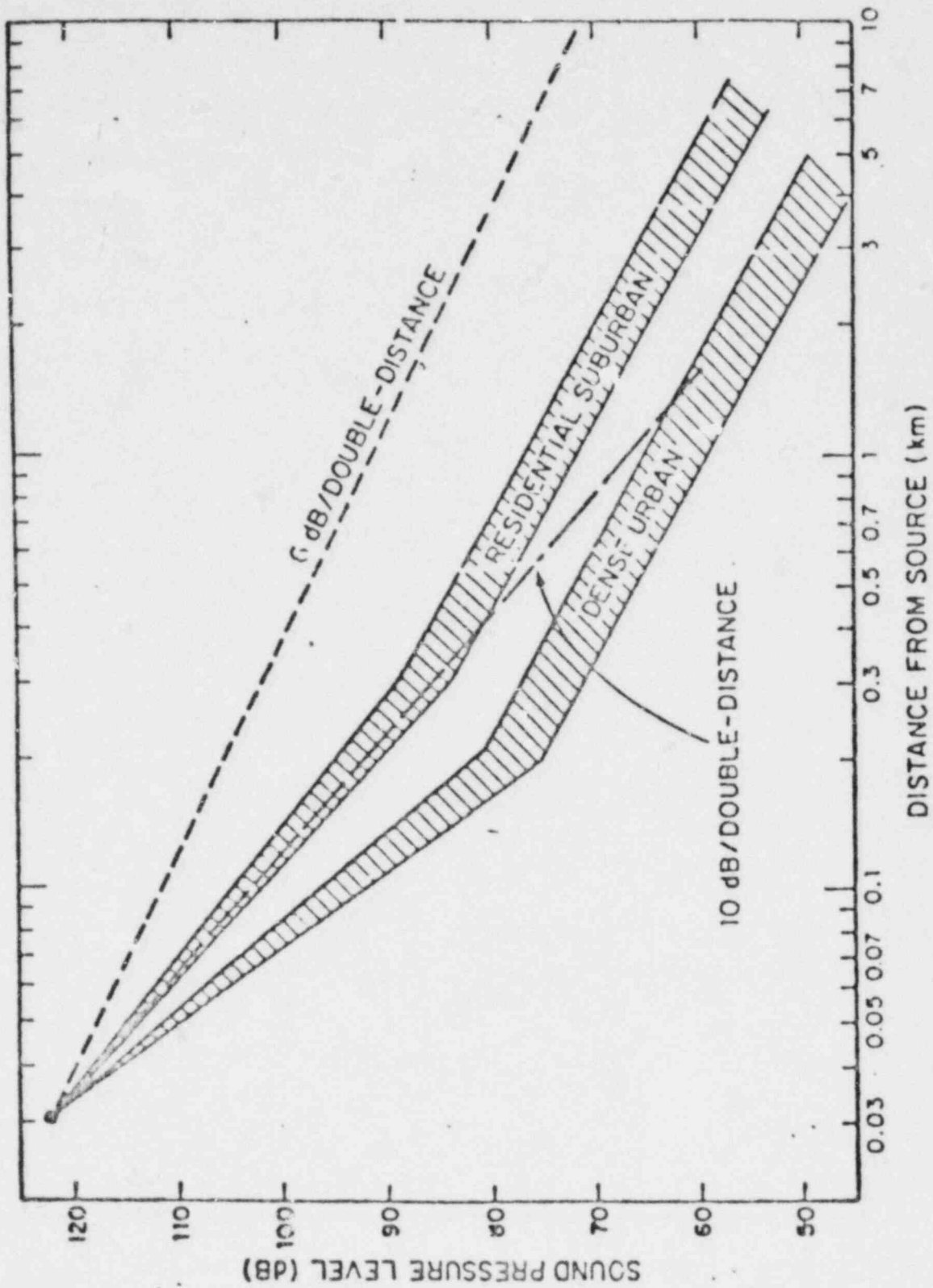


Figure 3-1: SUMMARY GRAPH FOR SIREN PROPAGATION LOSS

Source: Outdoor Warning Systems Guide, Report No. 4100 (1979) by Bolt Beranek and Newman, Inc.

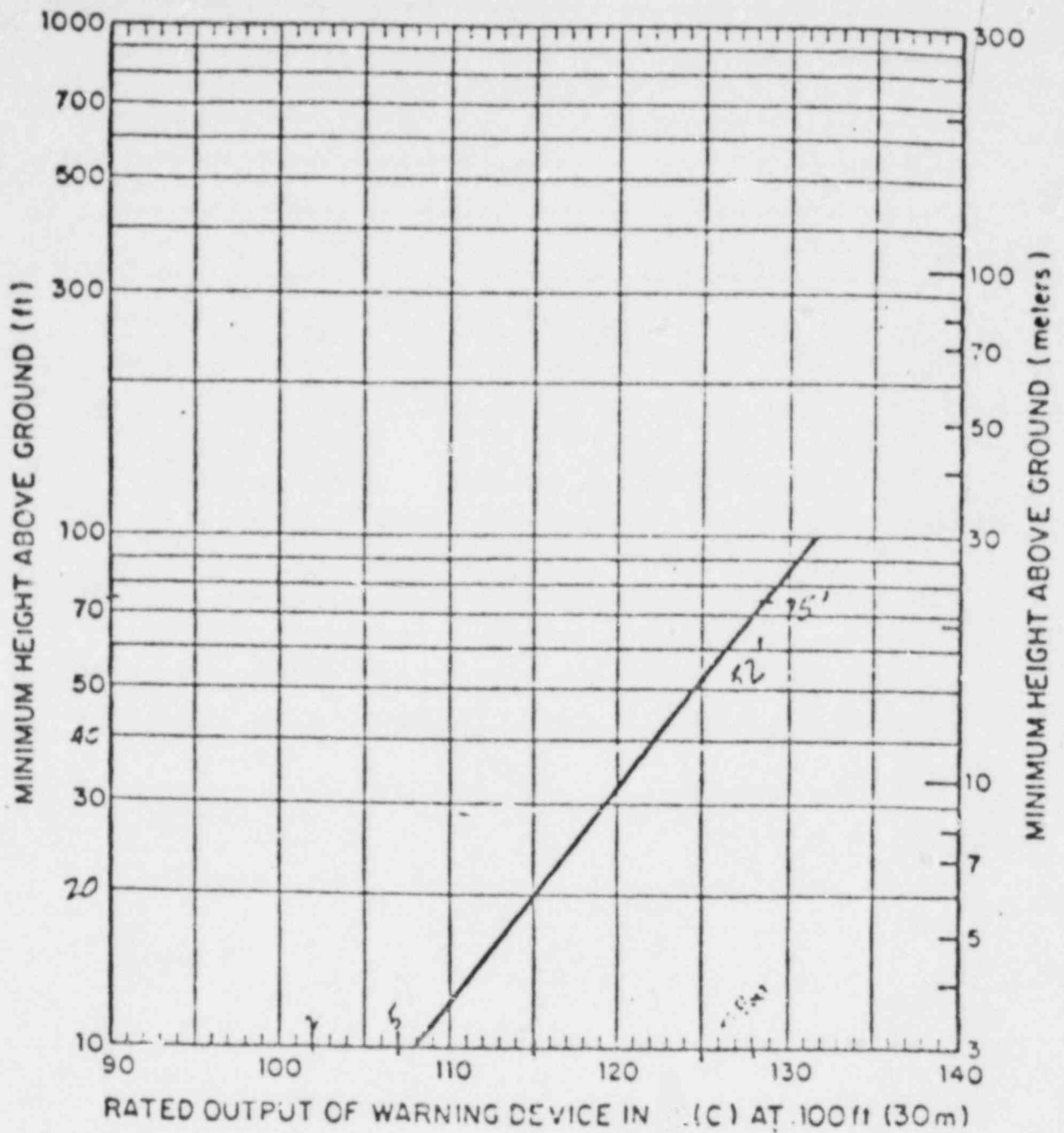


Figure 2 -2

Minimum Mounting Height of a Typical Warning Device to Avoid Risk of Hearing Damage to Pedestrians (for horizontal beam)

Source: Outdoor Warning Systems Guide, Report No. 4100 (1979) by Bolt Beranek and Newman, Inc.

4. Radio Receivers

The effectiveness of the ANS may be improved beyond regulatory requirements in a few locations by locating remote controlled radio receivers where enhanced notification may be desirable due to factory noise levels or similar causes. Any such supplemental notification equipment would be automatically activated. Such equipment is being evaluated at this time.

APPENDIX A

Copies of Topographic Maps

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FIGURE B-2

CORNWALL QUADRANGLE
NEW YORK
7.5 MINUTE SERIES (TOPOGRAPHIC)





Scale 1:50,000
Cornell, N.Y. 25730

SYMBOLS

- Iron Rail
- Light Rail
- ⊠ Manufacture
- U.S. Town
- Lake

CORNELL, N. Y.
 84122 5 - W 7800 7 S
 1967
 AND 8-148 - NE SERIES 1961

MAP CLASSIFICATION

Scale 1:50,000
Cornell, N.Y. 25730

Vertical Datum: Mean Sea Level (MSL)
 Horizontal Datum: North American Datum (NAD 83)
 Projection: Universal Transverse Mercator (UTM)
 Zone: 18N
 Contour Interval: 20 Feet

Map

Map prepared by the Geological Service
 from 1963 and 1965 data
 and other data. Topographic features are shown in black. Contour lines are shown in brown. The map shows the area around Cornell, New York, including the mountains and the city of Cornell.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WEST POINT QUADRANGLE
NEW YORK
7.5 MINUTE SERIES (TOPOGRAPHIC)
WEST POINT - 15 BARBAROUS

FIGURE B-3



Scale: 1 inch = 1 mile
Vertical Datum: Mean Sea Level
Horizontal Datum: NAD 83
Projection: UTM
Zone: 18N
Datum: NAD 83
Scale: 1:62,500
Vertical Datum: Mean Sea Level
Horizontal Datum: NAD 83
Projection: UTM
Zone: 18N
Datum: NAD 83



41° 20' 00" N
73° 52' 00" W

ROAD CLASSIFICATION
 Highway
 Major Road
 U.S. Route
 State Road

SCALE 1:4000
 METERS
 FEET

CONTOUR INTERVAL 20 FEET
 DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER

WEST POINT, N.Y.
 73° 52' 00" W
 41° 20' 00" N

41° 20' 00" N
 73° 52' 00" W

THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U.S. GEOLOGICAL SURVEY WASHINGTON, D.C. 20242
 A POLYMER REPRODUCING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

478 882 AND 337 882
 DECLINATION AT CENTER OF MAP

MAPS AND SYMBOLS AND INDICATED BY THE GEOLOGICAL SURVEY
 CONTROL BY USGS AND USCGS
 Topography from air photographs by photogrammetric methods
 Aerial photographs taken 1955. Final check 1957
 Hydrography computed from USCGS chart 282 (1954)
 Positions corrected. 1927 North American Datum
 10 000-foot grid based on New York coordinate system. 840 000
 1000-meter Universal Transverse Mercator grid used.
 Zone 18, datum of New York
 Low and normal high water indicated by dashed lines
 High and low tide indicated by solid lines
 Red line indicates area in which only
 water-soundings are shown
 Uncontoured elevations and depths in brown

OSCAWANA LAKE QUADRANGLE
NEW YORK
7.5 MINUTE SERIES (TOPOGRAPHIC)
SCALE 1:62,500

FIGURE B-4

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



41° 30' 00" N
73° 30' 00" W

1954
1:62,500



ROAD CLASSIFICATION

Heavy-duty ————— Light-duty
 Medium-duty ————— Unimproved dirt
 State Route ○

OSCAWANA LAKE, N. Y.
 625 WEST NORTH AT BALDWINVILLE
 841223-5-107345/775

1956
 AND 1958 IN THE SERIES 1951

SCALES: 1:24,000
 1 inch = 2000 feet
 1 centimeter = 1000 feet

CONTOUR INTERVAL, 20 FEET
 DATUM IS MEAN SEA LEVEL

THIS MAP (INCLUDING ANY REVISIONS) SHOWS ALL DATA CORRECT AS OF THE DATE OF THE SURVEY. FOR THE LATEST DATA, CONTACT THE NATIONAL GEOSPATIAL SURVEY, WASHINGTON, D. C. 20392. A FIDELITY CERTAINING TOPOGRAFICAL MAPS AND SYMBOLS IS AVAILABLE ON REQUEST.

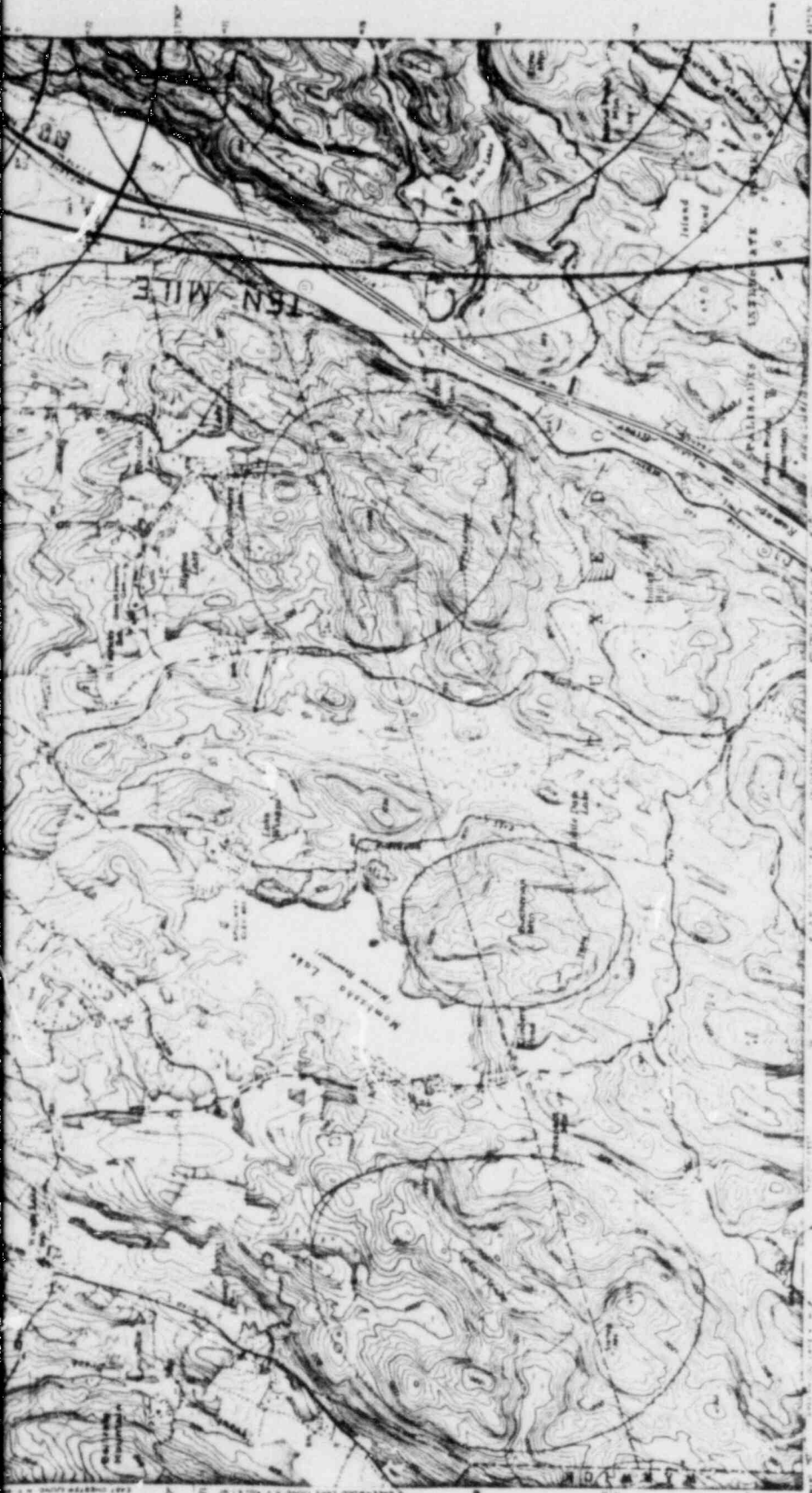
Map published and published by the Geological Survey
 Control by USGS and USCGS
 Topographic from aerial photographs by photogrammetric methods
 Air photo taken from 1955 and 1956. First check 1956
 Photometric projection. 1927 North American datum
 10,000-foot grid based on true local meridian system. Also zone
 1800-meter Universal Transverse Mercator grid lines
 along 18 degree of zone
 True and magnetic north indicated adjacent to each road
 section on some planting maps. This information is confidential
 unless otherwise shown or stated.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MONROE QUADRANGLE
NEW YORK - ORANOE CO
15 MINUTE SERIES (TOPOGRAPHIC)
DATE OF ORIGINAL SURVEY 1880

FIGURE B-5





Mapmed, edited, and published by the Geographical Survey
 Center in 1955 and 1956.
 This map is based on the original survey data and photogrammetric data of 1955 and 1956. The original
 survey data was obtained from the U.S. Geological Survey
 in 1955 and 1956. The original survey data was
 obtained from the U.S. Geological Survey in 1955
 and 1956. The original survey data was obtained
 from the U.S. Geological Survey in 1955 and 1956.
 The original survey data was obtained from the
 U.S. Geological Survey in 1955 and 1956.

MONROE, N. Y.
 1:50,000
 1957

Scale 1:50,000
 1 inch = 1.25 miles
 1 centimeter = 39.37 inches

MONROE, N. Y.
 1:50,000
 1957

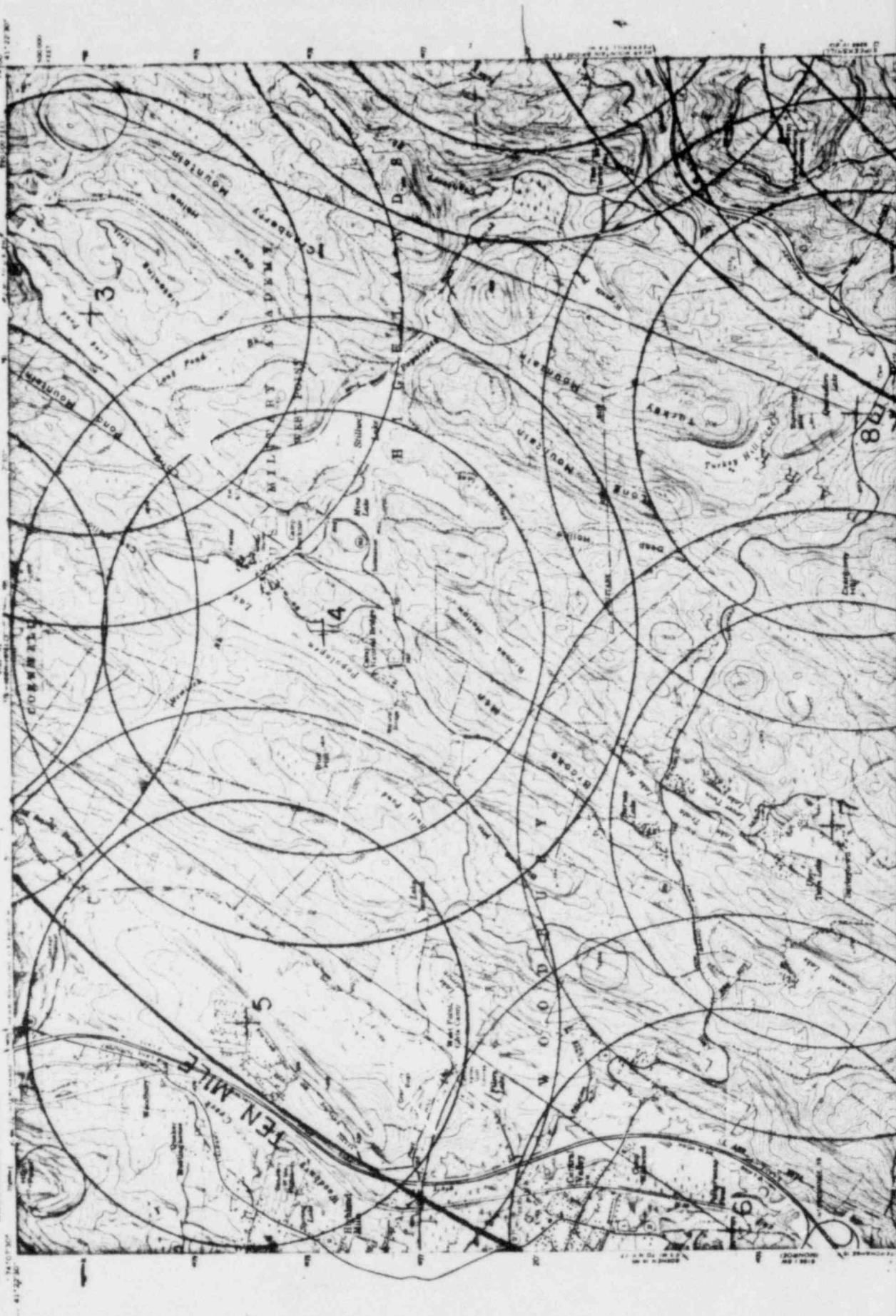
MONROE, N. Y.
 1:50,000
 1957

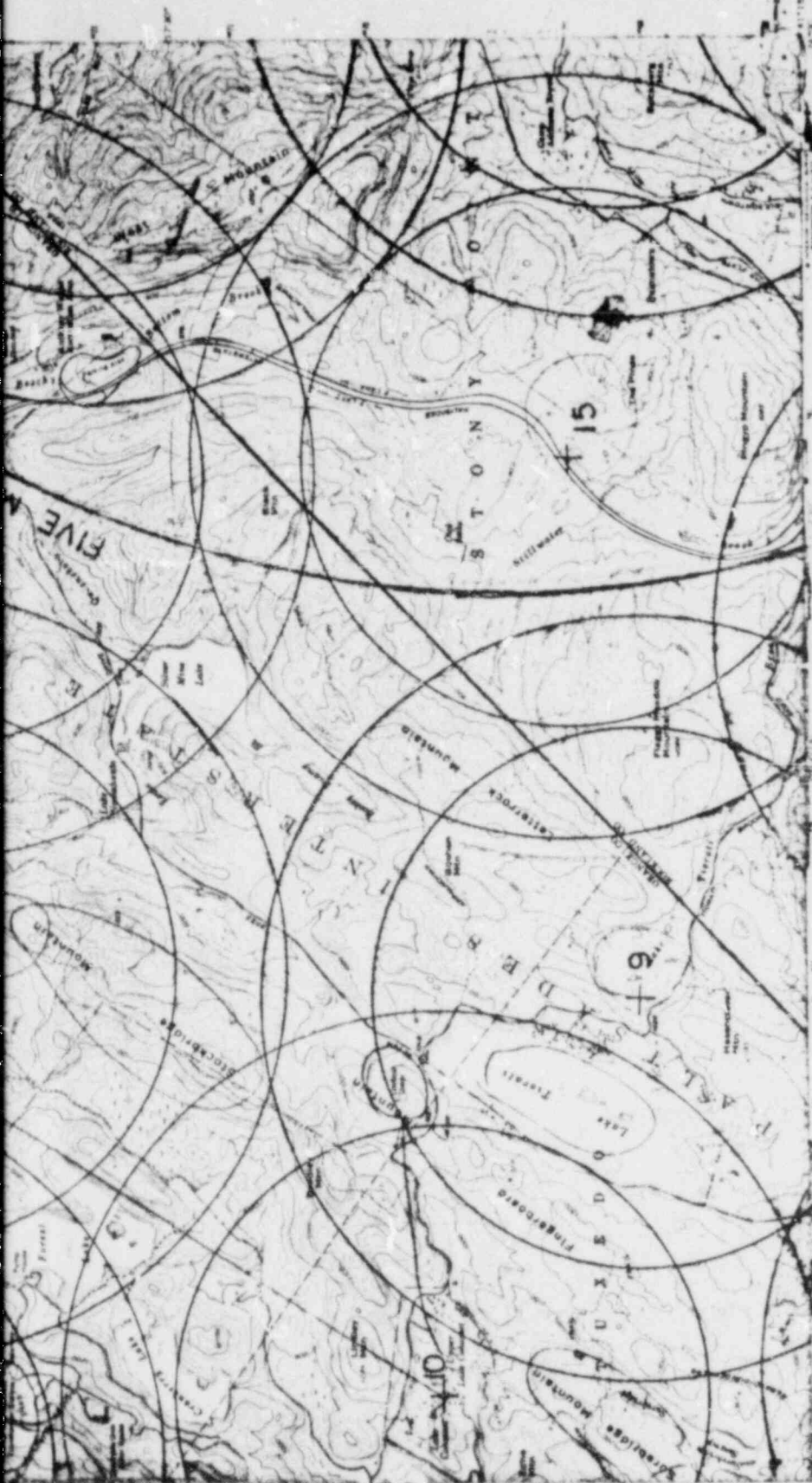
MONROE, N. Y.
 1:50,000
 1957

POPOLOPEN LAKE QUADRANGLE
NEW YORK
7.5 MINUTE SERIES (TOPOGRAPHIC)
1893

FIGURE B-6

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY





Mapped, edited, and published by the Geological Survey
 Control by USGS and USGS
 Topographic maps were photographed by photogrammetric methods
 from air photographs taken in 1955 and 1956. From 1957
 photogrammetric data were used to correct errors in the
 1955 and 1956 maps. The map is published in the
 1:50,000 scale Universal Transverse Mercator projection
 with 18 centimeter scale.

This map complies with National Map Accuracy Standards
 for sale by U.S. Geological Survey, Washington, D.C. 20242
 A faulted geologic topographic map and symbols in blue on a red background

Mapped and published by the Geological Survey
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 with 18 centimeter scale.

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 for sale by U.S. Geological Survey, Washington, D.C. 20242
 A faulted geologic topographic map and symbols in blue on a red background

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FIGURE B-7

PEEKSKILL QUADRANGLE
NEW YORK
7.5 MINUTE SERIES (TOPOGRAPHIC)
DATA 1957; REVISION 1960





Maplet edited and published by The Geographical Service
 Control by USGS and USCGS
 Using data from aerial photographs by photographic reconnaissance
 Aerial photography taken 1955 (1:50,000 scale)
 Photographic compilation from USGS maps 250, 251, 252, 253, 254
 Production production 1957 North American datum
 10,000-foot grid based on New York State plane system 4800 000
 1000-meter Universal Transverse Mercator 8° 15' 00" W
 Zone 18
 The red dashed lines indicate selected areas and have been
 added to the map at the publisher's request. They are not
 shown on the original photography. They are shown on the map
 and are shown on the map.

Scale 1:50,000
 1 inch = 1.609 meters
 1 centimeter = 0.3937 inches

ROAD CLASSIFICATION
 Heavy-duty
 Medium-duty
 Light-duty
 Unimproved dirt
 U.S. Route
 State Route

PEEKSKILL, N. Y.
 48° 15' 00" N 74° 15' 00" W
 4811500 7415000
 1957
 AND 6000 IN SW-SERIES 1801

MOHEGAN LAKE QUADRANGLE
NEW YORK
7.5 MINUTE SERIES (TOPOGRAPHIC)
SCALE: 1 INCH = 1 MILE

FIGURE B-8

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



U.S. GEOLOGICAL SURVEY
WASHINGTON, D.C. 20508



ROAD CLASSIFICATION
 Main Road
 Secondary Road
 U.S. Route
 State Road

MOHEGAN LAKE, N. Y.
 1:25,000
 1954
 AIRS 5885 14 82 57005 1801

SCALE 1:25,000
 METERS
 FEET
 0 100 200 300 400 500 600 700 800 900 1000
 0 100 200 300 400 500 600 700 800 900 1000

FROM THE COMPOSITE PHOTO AERIALS AND AERIAL PHOTOGRAMMETRY
 FOR SALE BY U.S. GEOLOGICAL SURVEY, WASHINGTON, D. C. 20508
 * FOR OVER SEVERAL THOUSAND MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Mapped, edited and published by the Geological Survey
 Control in 1955 and 1956
 Topographic base aerial photographs by photogrammetric methods
 Aerial photograph taken 1955 and 1956, 1:40,000 scale
 Photogrammetric 1957 North American datum
 10,000-foot grid based on New York Coordinate system
 1000-foot contour interval
 1:25,000 scale
 Five and six-foot lines indicate water depth and lake level
 based on mean photographs. This information is available

SLOATSBURG QUADRANGLE
NEW YORK - NEW JERSEY
7.5 MINUTE SERIES (TOPOGRAPHIC)

FIGURE B-9

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY





SLOATSBURG, N. Y. - N. J.
 1:50,000
 1955
 485 618 1 89 SERIES 1801

MAP CLASSIFICATION
 UNCLASSIFIED
 AUTHORITY: USGS
 DATE: 1955

SCALE 1:50,000
 1:50,000
 1:50,000
 1:50,000

CONDITION INTERVAL 20 FEET
 20 FEET
 20 FEET
 20 FEET

THIS MAP, UNLESS OTHERWISE NOTED, IS UNCLASSIFIED
 FOR SALE BY THE GEOLOGICAL SURVEY, WASHINGTON, D. C. 20540
 * FOLIO'S CONTAINING COORDINATE DATA AND SYMBOLS IS AVAILABLE ON REQUEST

MAPS AND SURVEYS PUBLISHED BY THE GEOLOGICAL SURVEY
 UNDER AUTHORITY OF THE ACT OF MARCH 3, 1879, CHAP. 270
 UNDER AUTHORITY OF THE ACT OF MARCH 3, 1879, CHAP. 270
 UNDER AUTHORITY OF THE ACT OF MARCH 3, 1879, CHAP. 270

UNITED STATES GEOLOGICAL SURVEY
 WASHINGTON, D. C. 20540

Maplet edited and published by the Geographical Service
 Geographical Service, Department of Defense, Washington, D.C. 20315
 This maplet was prepared by the Geographical Service, Department of Defense, Washington, D.C. 20315
 Original material: 1977, National Geographic Society
 10,000-foot grid based on the North American Datum of 1983
 1:50,000 scale
 1:50,000 scale
 1:50,000 scale
 1:50,000 scale



ROAD CLASSIFICATION
 Major Road
 Minor Road
 Unimproved Road
 Footpath

THIELS, NY
 NAID 15-40000
 1984
 1:50,000 scale



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FIGURE B-10

THEILLS QUADRANGLE
NEW YORK
7.5 MINUTE SERIES TOPOGRAPHIC



HAVERSTRAW QUADRANGLE
NEW YORK
7.5 MINUTE SERIES (TOPOGRAPHIC)

FIGURE B-II



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY





HAVERSTRAW N.Y.
 1:50,000
 1950

SPOT HEIGHTS
 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56

ROAD CLASSIFICATION
 Interstates
 Major Highways
 U.S. Route
 State Road

SYMBOLS
 Lighted
 Unimproved
 Street

SCALE
 1:50,000

CONTROLS
 CONTROLLED BY THE U.S. GEOLOGICAL SURVEY
 PHOTOGRAPHIC AND SURVEYING DATA FROM 1945 TO 1950
 PHOTOGRAPHIC SURVEYING DATA FROM 1945 TO 1950
 PHOTOGRAPHIC SURVEYING DATA FROM 1945 TO 1950

HAVERSTRAW N.Y.
 1:50,000
 1950

U.S. GEOLOGICAL SURVEY
 WATER RESOURCES DIVISION
 BOSTON OFFICE
 100 BRATTLE STREET
 BOSTON, MASSACHUSETTS 02116

Map of Hudson River and published by the Government of the United States of America.

Copyright by the Government of the United States of America, 1917.

Revised Edition, 1917.

Scale, 1:50,000.

Projection, Mercator.

Contour Interval, 20 feet.

Vertical Datum, Mean Sea Level.

Horizontal Datum, Mean Sea Level.

Map of the Hudson River and published by the Government of the United States of America.

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Revised Edition, 1917.

Scale, 1:50,000.

Projection, Mercator.

Contour Interval, 20 feet.

Vertical Datum, Mean Sea Level.

Horizontal Datum, Mean Sea Level.



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Projection, Mercator.

Contour Interval, 20 feet.

Vertical Datum, Mean Sea Level.

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Scale, 1:50,000.

Projection, Mercator.

Contour Interval, 20 feet.

Vertical Datum, Mean Sea Level.

Horizontal Datum, Mean Sea Level.



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



FIGURE B-12

OSSINING QUADRANGLE
NEW YORK - WESTCHESTER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

ATTACHMENT C

Problems Hindering Installation
of the Alert and Notification System

The following is a list of problems/obstacles that have hindered the procurement and/or are hindering the installation of the alert and notification system:

- (1) Engineering studies necessary to evaluate competing technologies and assure that the most appropriate system would be selected consumed approximately six months.
- (2) All four counties were requested to concur with the siren alert and notification system, in preference to other technologies, prior to the purchase of the system. Substantial time was spent in attempts to obtain this concurrence. The Authority and Con Edison were reluctant to procure a system without firm support from the four counties.
- (3) The sirens are being installed in four different utility service areas and require the use of an outside contractor for installation in three of these areas. Coordination with the other utilities' field staffs has been essential and time-consuming.
- (4) Obtaining permits from numerous affected governments for installing most of the eighty-eight poles and sirens has been necessary and time-consuming.

ATTACHMENT C

(continued)

- (5) Unanticipated interruption of factory production has required that final assembly of the siren system be completed in the field rather than at the factory.
- (6) Delivery of the siren system is affected by the large number ordered nationally. The licensees were unable to negotiate an accelerated delivery schedule.
- (7) Significant technical problems were encountered in the selection of an available existing radio frequency for each county and the determination of appropriate radio activation components for each. Solution of the technical problems consumed considerable time, hindering the placement of orders for components.
- (8) Requests for different and sometimes additional system functions from county to county necessitated the purchase of different components for respective counties. Coordination of counties' differing requests and requirements and purchases from more than one component manufacturer have been time-consuming.
- (9) Modification of existing FCC radio licenses to cover additional use of chosen frequencies for siren activation requires FCC approval. A great deal of time is being expended to ensure that all FCC license requirements are met.

ATTACHMENT C

(continued)

(10) Resolution of most of the above-listed problems has hindered award of contracts to install the siren system in certain locations because of the need to prepare completed and thorough contract terms, plans and specifications for bidding documents.