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10 CFR 50.90

TMI-11-171

January 20, 2012

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Three Mile Island Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-50
NRC Docket No. 50-289

Subject: Three Mile Island Unit 1 Response to Request for Additional Information Related to the Proposed Administrative Changes to the Technical Specifications

References:

(1) Letter from M. D. Jesse (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "License Amendment Request to revise Technical Specifications to incorporate administrative changes" dated October 18, 2011 (ML112911548)

(2) Letter from P. Bamford (U.S. Nuclear Regulatory Commission) to M. J. Pacilio (Exelon Generation Company, LLC), "Three Mile Island Nuclear Station, Unit 1 - Request for Additional Information Regarding Proposed License Amendment Revising Technical Specifications to Incorporate Administrative Changes" (TAC NO. ME7357)" dated December 19, 2011 (ML113360596)

By letter dated October 18, 2011 (Reference 1), Exelon Generation Company, LLC (Exelon), requested an amendment to the Technical Specifications (TS) for Three Mile Island Nuclear Station, Unit 1 (TMI, Unit 1) to incorporate several administrative changes including correcting typographical errors, removing unwarranted formatting, and clarifying symbols/pages that may not copy/print well.

The U.S. Nuclear Regulatory Commission (USNRC) staff has been reviewing the Reference 1 submittal and has determined that additional information is needed to complete the review. The USNRC staff formally requested additional information on December 19, 2011 (Reference 2).

Exelon's response to the USNRC questions is provided in Attachment 1 to this letter. Attachment 2 provides the existing TS page mark-ups and Attachment 3 provides the revised pages showing the proposed changes.

Exelon has determined that the information provided in response to this request for additional information does not impact the conclusions of the No Significant Hazards Consideration or Environmental Consideration as stated in Reference 1.

There are no regulatory commitments contained in this submittal.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), Exelon is notifying the Commonwealth of Pennsylvania of this response by transmitting a copy of this letter and its attachment to the designated State Official.

Should you have any questions concerning this letter, please contact Ms. Wendy E. Croft at (610) 765-5726.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 20th day of January, 2012.

Respectfully,

Michael D. Jesse
Director, Licensing and Regulatory Affairs
Exelon Generation Company, LLC

Attachments:
1. Response to Request for Additional Information Related to Proposed Administrative Changes to the Technical Specifications
2. Proposed Technical Specification Pages (Mark-Up)
3. Revised Technical Specification Pages

cc: USNRC Region I, Regional Administrator
USNRC Project Manager, TMI, Unit 1
USNRC Senior Resident Inspector, TMI, Unit 1
Director, Bureau of Radiation Protection, PA Department of Environmental Resources
Chairman, Board of County Commissioners, Dauphin County, PA
Chairman, Board of Supervisors, Londonderry Township, PA
R. R. Janati, Commonwealth of Pennsylvania

ATTACHMENT 1

Response to Request for Additional Information Related to Proposed Administrative Changes to the Technical Specifications

Three Mile Island Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-50

NRC Question 1

In the application, Attachment 1, page 3 of 6, the tenth bullet states, "TS 3.5.2.5.b.1 and 2 on page 3-35 are edited to remove an erroneous period (.)." The existing TS 3.5.2.5.b.1 does not appear to contain an erroneous period. Please clarify or correct the submittal.

TMI Unit 1 Response

Three Mile Island, Unit 1 (TMI, Unit 1) withdraws the request to remove the erroneous period from Technical Specification (TS) 3.5.2.5.b.1. Attachment 2 contains a corrected proposed mark-up of TS page 3-35 showing this request withdrawn. Attachment 3 provides a revised "clean copy" of TS page 3-35.

NRC Question 2

The submitted markup and "clean copy" page versions (Attachments 2 and 3, respectively) for TS page 4-5 do not appear to reflect the current TS page 4-5. Specifically, they do not appear to reflect changes authorized by TMI-1 TS Amendment 273, dated May 27, 2010 (ADAMS Accession No. ML092740791), and letters dated March 4, 2011 (ADAMS Accession No. ML110550707), and October 27, 2011 (ADAMS Accession No. ML112980458). In particular, item numbers 23 and 24 on page 4-5 appear to be in error. A similar problem affects pages 1-3 and 3-35. Please submit corrected markup and "clean copy" versions of these pages, as appropriate.

TMI Unit 1 Response

Attachment 2 contains a corrected proposed mark-up of TS pages 4-5, 1-3, and 3-35 incorporating TS Amendment 273 and letters dated March 4, 2011, and October 27, 2011 (as applicable). Attachment 3 provides revised "clean copies" of TS pages 4-5, 1-3, and 3-35.

NRC Question 3

According to the application, Attachment 1, page 4 of 6, TS Figure 5-1 has been updated for clarity and to revise the title box to reflect Exelon, the current licensee. TS Figure 5-1 is referenced by TS 5.1.1 (note that TS 5.1.1 refers to Figure 5.1) and describes it as an "extended plot plan," consistent with the List of Figures on TS page vii. TS 5.1.1 also states that Figure 5.1 (5-1) shows the TMI Exclusion Area. The extended plot plan title and the exclusion area depiction have been removed from the revised Figure 5-1, making TS 5.1.1 confusing and incorrect. In addition, TS 5.1.1 states that Figure 5.1 (5-1) shows the immediate surroundings, however the revised Figure 5-1 has eliminated some of the surrounding features such as the depiction of the offsite transmission lines. Please correct the revised Figure 5-1 consistent with the existing TS 5.1.1, and/or justify any desired changes to Figure 5-1, the List of Figures, and/or TS 5.1.1.

TMI Unit 1 Response

TMI, Unit 1 withdraws the request to update TS Figure 5-1 for clarity. Attachment 2 contains a corrected proposed mark-up of Figure 5-1 which only revises the title box to reflect Exelon, the current licensee. Attachment 3 provides a revised "clean copy" of Figure 5-1.

NRC Question 4

TS 5.1.1 describes Figure 5-2 as depicting the site topography for a radius of 5 miles from the station. The revised Figure 5-2 appears to have deleted the topographical lines. Therefore, please submit a revised Figure 5-2 that includes topographical information or justify, and submit, a revised TS 5.1.1.

TMI Unit 1 Response

TMI, Unit 1 withdraws the request to update TS Figure 5-2 for clarity. Attachment 2 contains a corrected proposed mark-up of Figure 5-2 which only revises the title box to reflect Exelon, the current licensee. Attachment 3 provides a revised "clean copy" of Figure 5-2.

NRC Observations

The NRC staff also has several observations regarding the submittal and the existing TSs. As described above, the NRC staff notes that TS 5.1.1 refers to Figure 5-1 as Figure 5.1. Exelon should consider clarifying this discrepancy. In addition, the NRC staff notes that TS 5.1.1 refers to a "weather tower" depicted on Figure 5-3. Both the existing and revised Figure 5-3 depictions show a "weather station." Exelon should consider making this terminology consistent. Finally, the existing TS 5.1.1 refers to AmerGen Energy Company, LLC in the description of Figure 5.1 (5-1). Exelon should evaluate whether this is the correct terminology.

TMI Unit 1 Response

In accordance with the NRC observations noted above, TMI, Unit 1 requests the following additional proposed changes to the TMI, Unit 1 TS:

- TS 5.1.1 on page 5-1 was revised to state "Figure 5-1" consistent with the List of Figures on TS page vii and Figure 5-1.
- TS 5.1.1 on page 5-1 was revised to state "weather station" consistent with Figure 5-3.
- TS 5.1.1 on page 5-1 was revised to refer to "Exelon" in the description of Figure 5-1, consistent with response to NRC Question 3 above and Amendment 267.

Attachment 2 contains a corrected proposed mark-up of TS page 5-1. Attachment 3 provides a revised "clean copy" of TS page 5-1.

ATTACHMENT 2

Proposed Technical Specifications Pages (Mark-Up)

Three Mile Island Generating Station, Unit 1
Renewed Facility Operating License No. DPR-50

REVISED TECHNICAL SPECIFICATIONS PAGES

1-3
3-35
4-5
5-1
Figure 5-1 (page N/A)
Figure 5-2 (page N/A)

1.4.2 REACTOR PROTECTION SYSTEM

described in Section 7.1

The reactor protection system is ~~**described in Section 7.1**~~ of the Updated FSAR. It is that combination of protection channels and associated circuitry which forms the automatic system that protects the reactor by control rod trip. It includes the four protection channels, their associated instrument channel inputs, manual trip switch, all rod drive control protection trip breakers, and activating relays or coils.

1.4.3 PROTECTION CHANNEL

described in Section 7.1

A PROTECTION CHANNEL as ~~**described in Section 7.1**~~ of the updated FSAR (one of three or one of four independent channels, complete with sensors, sensor power supply units, amplifiers, and bistable modules provided for every reactor protection safety parameter) is a combination of instrument channels forming a single digital output to the protection system's coincidence logic. It includes a shutdown bypass circuit, a protection channel bypass circuit and a reactor trip module.

1.4.4 REACTOR PROTECTION SYSTEM LOGIC

described in Section 7.1

This system utilizes reactor trip module relays (coils and contacts) in all four of the protection channels as ~~**described in Section 7.1**~~ of the updated FSAR, to provide reactor trip signals for de-energizing the four control rod drive trip breakers. The control rod drive trip breakers are arranged to provide a one-out-of-two-times-two logic. Each element of the one-out-of-two-times-two logic is controlled by a separate set of two-out-of-four logic contacts from the four reactor protection channels.

1.4.5 ENGINEERED SAFETY FEATURES SYSTEM

This system utilizes relay contact output from individual channels arranged in three analog sub-systems and two two-out-of-three logic sub-systems as shown in Figure 7.1-4 of the updated FSAR. The logic sub-system is wired to provide appropriate signals for the actuation of redundant engineered safety features equipment on a two-of-three basis for any given parameter.

1.4.6 DEGREE OF REDUNDANCY

The difference between the number of operable channels and the number of channels which, when tripped, will cause an automatic system trip.

1.5 INSTRUMENTATION SURVEILLANCE

1.5.1 TRIP TEST

A TRIP TEST is a test of logic elements in a protection channel to verify their associated trip action.

3.5.2.5 Control Rod Positions

a. Operating rod group overlap shall not exceed 25 percent ±5 percent, between two sequential groups except for physics tests.

b. Position limits are specified for regulating control rods. Except for physics tests or exercising control rods, the regulating control rod insertion/withdrawal limits are specified in the CORE OPERATING LIMITS REPORT.

1. If regulating rods are inserted in the restricted operating region, corrective measures shall be taken immediately to achieve an acceptable control rod position. Acceptable control rod positions shall be attained within 24 hours, and FQ(Z) and $F^N_{\Delta H}$ shall be verified within limits once every 2 hours, or power shall be reduced to ≤ power allowed by insertion limits.

2. If regulating rods are inserted in the unacceptable operating region, initiate boration within 15 minutes to restore SDM to ≥1% ΔK/K, and restore regulating rods to within restricted region within 2 hours or reduce power to ≤ power allowed by rod insertion limits.

c. Safety rod limits are given in 3.1.3.5.

3.5.2.6 Deleted

3.5.2.7 Axial Power Imbalance:

a. Except for physics tests the axial power imbalance, as determined using the full incore system (FIS), shall not exceed the envelope defined in the CORE OPERATING LIMITS REPORT.

The FIS is operable for monitoring axial power imbalance provided the number of valid self powered neutron detector (SPND) signals in any one quadrant is not less than the limit in the CORE OPERATING LIMITS REPORT.

b. When the full incore detector system is not OPERABLE and except for physics tests axial power imbalance, as determined using the power range channels (out of core detector system)(OCD), shall not exceed the envelope defined in the CORE OPERATING LIMITS REPORT.

c. When neither detector system above is OPERABLE and, except for physics tests axial power imbalance, as determined using the minimum incore system (MIS), shall not exceed the envelope defined in the CORE OPERATING LIMITS REPORT.

d. Except for physics tests if axial power imbalance exceeds the envelope, corrective measures (reduction of imbalance by control rod movements and/or reduction in reactor power) shall be taken to maintain operation within the envelope. Verify FQ(Z) and $F^N_{\Delta H}$ are within limits of the COLR once per 2 hours when not within imbalance limits.

TABLE 4.1-1 (Continued)

CHANNEL DESCRIPTION	CHECK(c)	TEST(c)	CALIBRATE(c)	REMARKS
19. Reactor Building Emergency Cooling and Isolation System Analog Channels				
a. Reactor Building 4 psig Channels	(1)	(1)		(1) When CONTAINMENT INTEGRITY is required.
b. RCS Pressure 1600 psig	(1)	(1)	NA	(1) When RCS Pressure > 1800 psig.
c. Deleted				
d. Reactor Bldg. 30 psi pressure switches	(1)	(1)		(1) When CONTAINMENT INTEGRITY is required.
e. Reactor Bldg. Purge Line High Radiation (AH-V-1A/D)	(1)	(1)~~(2)~~		(1) When CONTAINMENT INTEGRITY is required.
f. Line Break Isolation Signal (ICCW & NSCCW)	(1)	(1)		(1) When CONTAINMENT INTEGRITY is required.
20. Reactor Building Spray System Logic Channel	NA		NA	
21. Reactor Building Spray 30 psig pressure switches	NA			
22. Pressurizer Temperature Channels		NA		
23. Control Rod Absolute Position	(1)	NA		(1) Check with Relative Position Indication
a. Zone Reference Switch	NA	R(1)	NA	(1) Verify switch functions
24. Control Rod Relative Position	(1)	NA	NA	(1) Check with Absolute Position Indication
25. Core Flooding Tanks				
a. Pressure Channels ~~Coolant~~	NA	NA		
b. Level Channels	NA	NA		
26. Pressurizer Level Channels		NA		

Amendment No. ~~24, 78, 156, 157, 175, 189, 200, 225, 273, 274~~

5.0 DESIGN FEATURES

5.1 SITE

Applicability

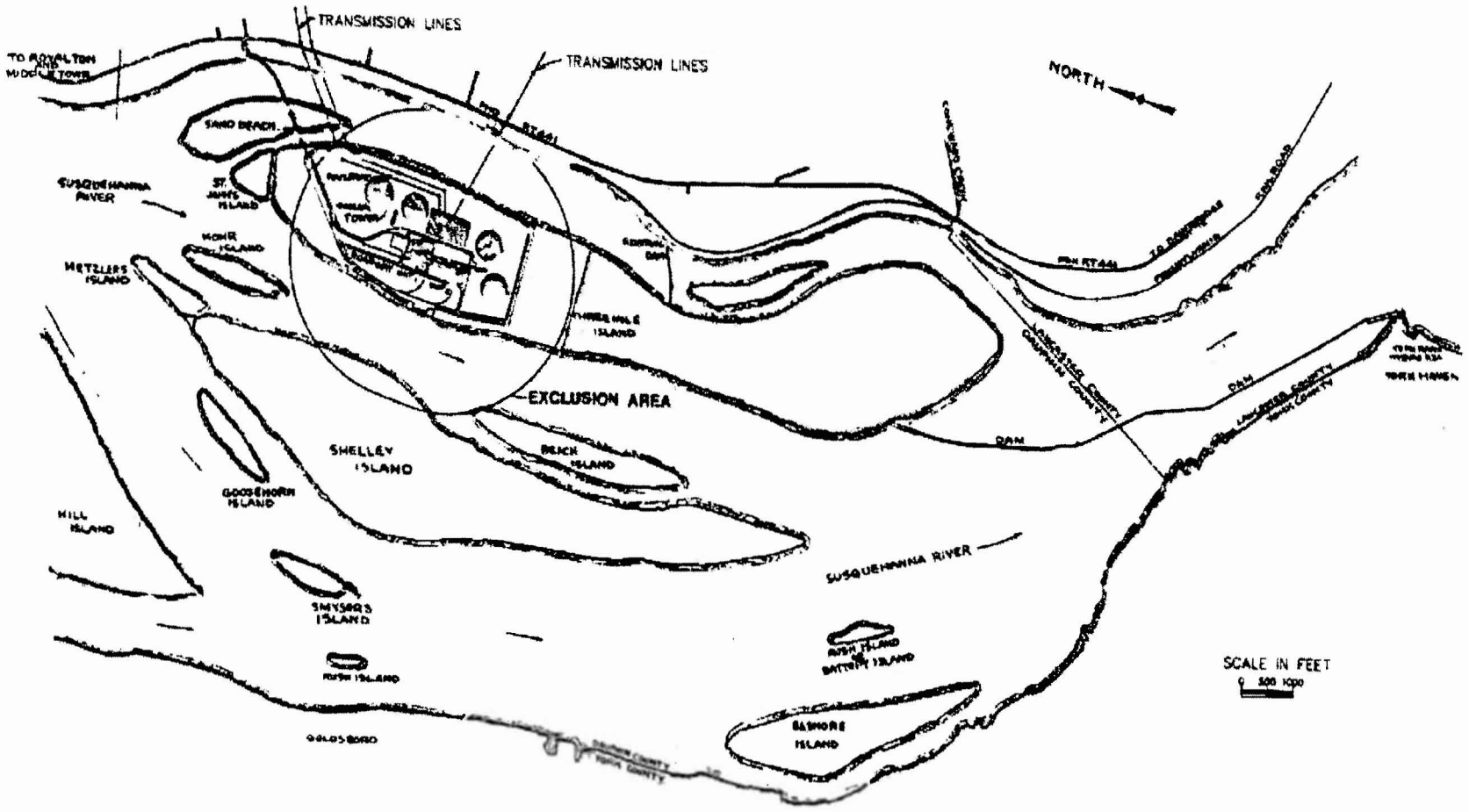
Applies to the location and extent of the exclusion boundary, restricted area, and low population zone.

Objective

To define the above by location and distance description.

Specification

5.1.1 The Three Mile Island Nuclear Station Unit 1 is located in an area of low population density about ten miles southeast of Harrisburg, PA. It is in Londonderry Township of Dauphin County, Pennsylvania, about two and one-half miles north of the southern tip of Dauphin County, where Dauphin is coterminal with York and Lancaster Counties. The station is located on an island approximately three miles in length situated in the Susquehanna River upstream from York Haven Dam. Figure ~~5.1~~ 5-1 is an extended plot plan of the site showing the plant orientation and immediate surroundings. The Exclusion Area as defined in 10 CFR 100.3, is a 2,000 ft. radius, including portions of Three Mile Island, the river surface around it, and a portion of Shelley Island, which is owned by ~~AmerGen Energy Company, LLC~~ Exelon Generation Company, LLC. The minimum distance of 2,000 ft. occurs on the shore of the mainland in a due easterly direction from the plant as shown on Figure ~~5.1~~ 5-1 for the Exclusion Area. Figure 5-3 showing the physical location of the fence defines the "Restricted Area" surrounding the plant. The minimum distance of the "Restricted Area" is approximately 560 feet and is from the centerline of the TMI Unit 2 Reactor Building to a point on the westerly shoreline of Three Mile Island. The minimum distance to the outer boundary of the low population zone is two miles as shown on T.S. Figure 5-2, which also depicts the site topography for a radius of five miles. T.S. Figure 5-3 depicts the locations of gaseous effluent release points and liquid effluent outfalls (as tabularized on page 5-10), and the meteorological tower location (designated as 'weather ~~tower~~ station' on the figure).



Amendment No. ~~140, 216~~, ~~246~~

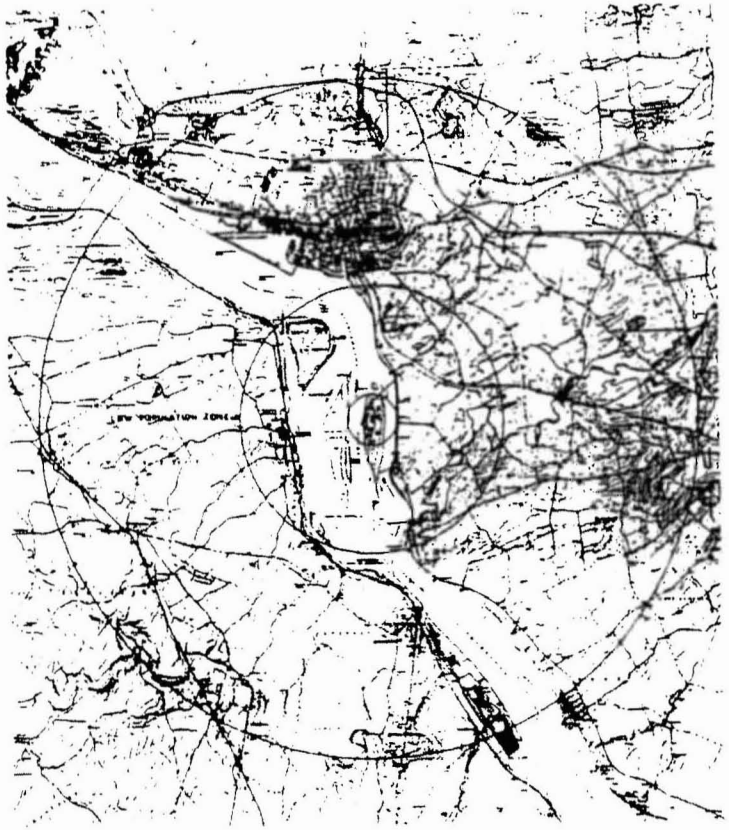
Exelon

~~AmerGen~~

Three Mile Island Nuclear Station

EXTENDED PLOT PLAN

CAD FILE: 6717R1,DWG FIG 5-1



CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

Exelon

~~AmerGen~~

Site Topography
5 Mile Radius

Three Mile Island Nuclear Station

Fig. 5-2

ATTACHMENT 3

Revised Technical Specifications Pages

Three Mile Island Generating Station, Unit 1
Renewed Facility Operating License No. DPR-50

REVISED TECHNICAL SPECIFICATIONS PAGES

1-3
3-35
4-5
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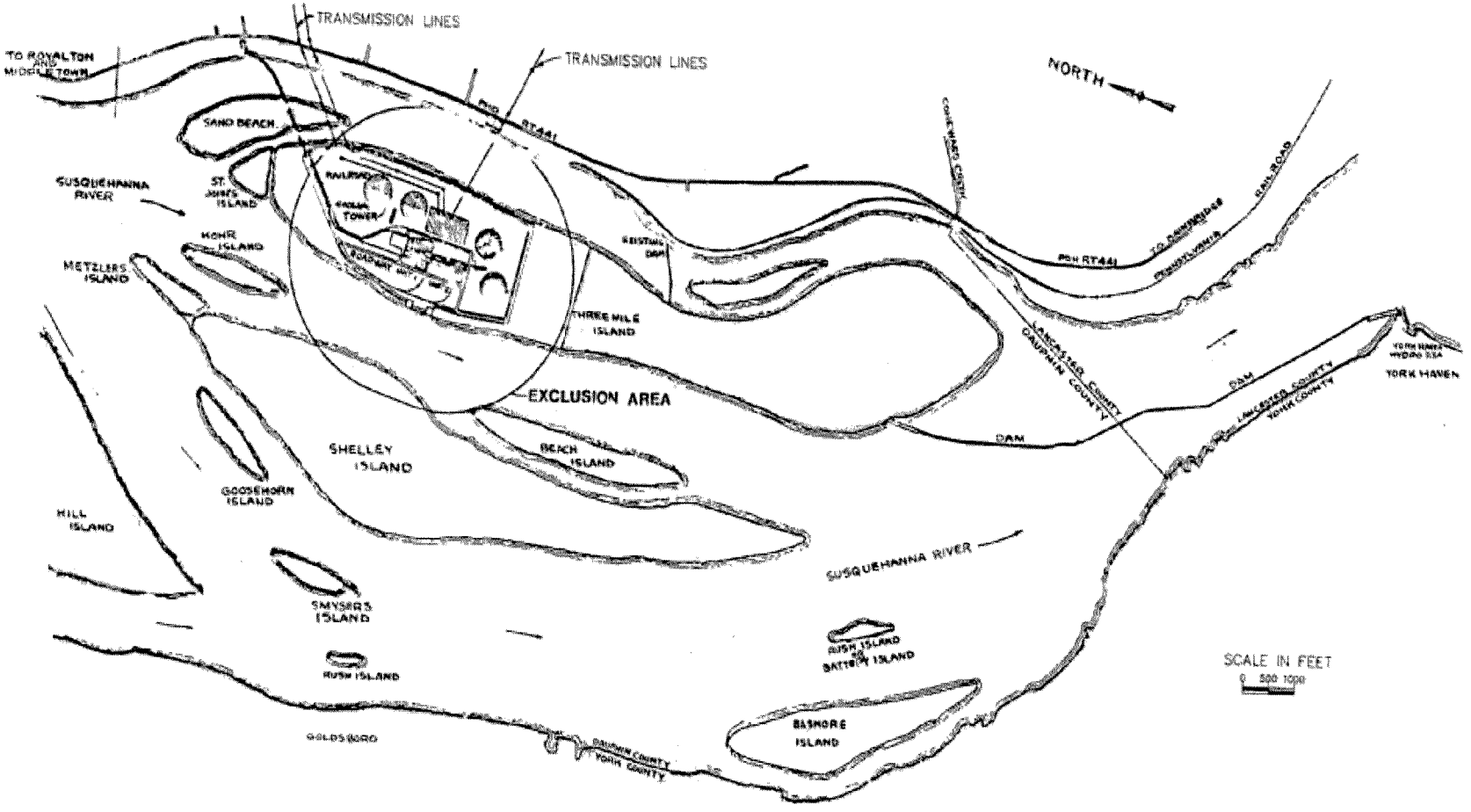
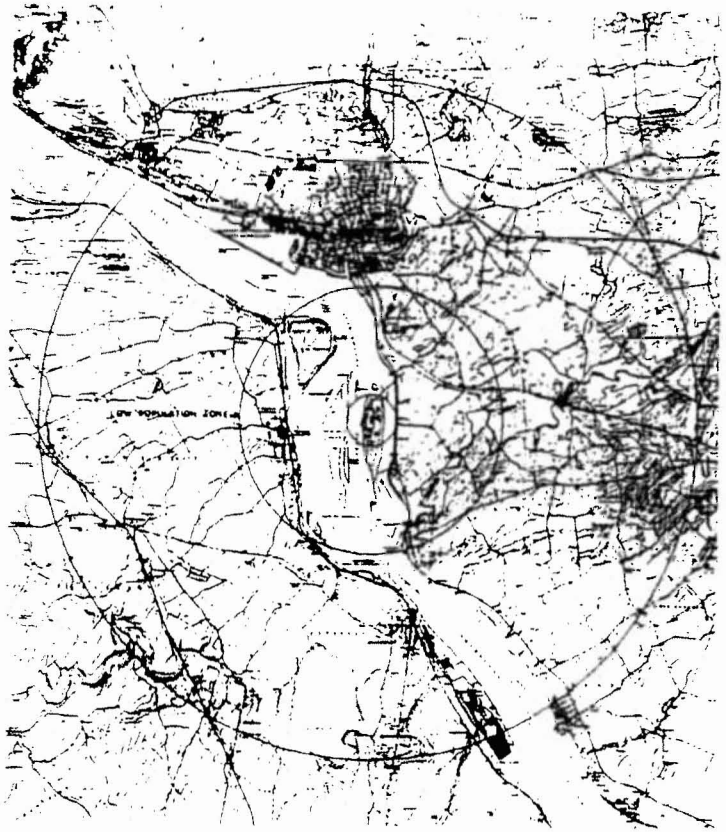


Amendment No. ~~140, 216, 246~~

Exelon
Three Mile Island Nuclear Station

EXTENDED PLOT PLAN

CAD FILE: 6717R1,DWG FIG 5-1



CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

Exelon
Site Topography
5 Mile Radius
Three Mile Island Nuclear Station

Fig. 5-2