



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

January 9, 1991

Docket Nos. 50-317  
and 50-318

LICENSEE: Baltimore Gas and Electric Company (BG&E)  
FACILITY: Calvert Cliffs Nuclear Power Plant, Units 1 and 2  
SUBJECT: SUMMARY OF MEETING HELD WITH BG&E ON NOVEMBER 1, 1990 TO  
DISCUSS THE ACCEPTABLE COPING TIME ASSOCIATED WITH STATION  
BLACK-OUT

BACKGROUND

On July 21, 1988, the Code of Federal Regulations 10 CFR Part 50, was amended to include a new Section 50.63, entitled, "Loss of All Alternating Current Power," (Station Blackout). The station blackout (SBO) rule requires that each light-water-cooled nuclear power plant be able to withstand and recover from an SBO of specified duration. The SBO rule also requires that information defined in the rule be provided to the staff for review.

Baltimore Gas and Electric Company (BG&E or the licensee) provided a response to the SBO rule for the Calvert Cliffs Nuclear Power Plant, Units 1 and 2, by letter dated April 14, 1989, March 30, 1990, and September 24, 1990. The staff reviewed the responses and prepared a safety evaluation (SE) dated October 10, 1990. The SE included the criteria used to determine compliance with the SBO rule and indicated that several reevaluations and confirmations still need to be completed as described in the SE.

PURPOSE

Members of the NRC staff met with the licensee's representatives in Rockville, Maryland, on November 1, 1990, to discuss specific concerns pertaining to recommendations outlined in the SBO SE. These included reevaluating the plant's ability to cope with an SBO for 8-hours or provide additional justification for the 4-hour duration provided in the licensee's response.

Enclosed is a copy of the proposed agenda, the licensee's presentation, and the attendance list.

SUMMARY


Based on the recommendations of the SE, it was suggested that the licensee reevaluate the plant's ability to cope with an SBO for 8-hours or verify that the July 23, 1987, loss of offsite power (LOOP) was a random occurrence and not

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PDR ADOCK 05000317  
P PDR

symptomatic of grid instability. The LOOP was caused by a ground fault developed on one of the two 500 KV transmission lines connecting Calvert Cliffs to the BG&E grid. In addition, circuit breakers at the Calvert Cliffs facility for the other transmission line incorrectly tripped open. The fault on the transmission line was caused by a tree that came in contact with the transmission line. The cause of the transmission line circuit breakers tripping incorrectly was determined to be the fault of a defective logic circuit card in the primary static relay panel.

The licensee's presentation included a description of the event, root causes, corrective actions taken, and future offsite power enhancements. The licensee responded to the staff's questions related to the LOOP event. However, insufficient information was provided to support the licensee's determination that the failure of the logic circuit card was random. Based on the staff's concerns, the licensee indicated that it would further assess the root cause of the failure, tests performed, and other data to support its conclusion that the failure was random.

By letters dated November 13, 1990, and December 13, 1990, the licensee responded to the staff's SE and concerns raised during the meeting. The staff is currently reviewing the licensee's responses and will provide a supplemental SE. The adequacy of the licensee's justification for the 4-hour coping time for a SEO at Calvert Cliffs will be addressed in the supplemental SE.



Daniel G. McDonald, Senior Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Attendance List
2. Proposed Agenda
3. Licensee's Presentation Materials

cc w/enclosures:

Licensee Service List

January 9, 1991

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ORIGINAL SIGNED BY,

Daniel G. McDonald, Senior Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

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2. Proposed Agenda
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cc w/enclosures:

Licensee Service List

DISTRIBUTION

Docket File	NRC & Local PDRs	FMiraglia
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PDI-1:LA  
CVogan  
1/9/91

PDI-1:PE *Sl*  
SSanders:avl  
1/9/91

*Daniel G. McDonald*  
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01/09/91

*RAE*  
PDI-1:D  
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01/09/91

DOCUMENT NAME: CC 11/1/90 MTG SUMMARY

Mr. G. C. Creel  
Baltimore Gas & Electric Company

Calvert Cliffs Nuclear Power Plant

cc:

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ATTENDANCE LISTSBO MTG 11/01/90

<u>NAME</u>	<u>TITLE</u>
Daniel G. McDonald	NRC/ PM
Robert A. Capra	NRC/Dir. PDI-1
Janak H. Raval	NRC/SPLB-NRR
James E. Knight	NRC/NRR/DST/SELB
Paul Gill	NRC/NRR/DST/SELB
Serita Sanders	NRC/NRR/PDI-1 Proj Manager
Charles R. Mohon	BG&E/Diesel Gen-SBO Project
Philip J. Hebrauk	BG&E/Project Engineer Diesel Gen. Project
Pat Furio	BG&E/Licensing
Richard Buttner	BG&E/Electrical Analysis



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

Proposed Agenda

NRC/BG&E Meeting on Station Blackout

November 1, 1990

OWFN

- |      |   |          |
|------|---|----------|
| I.   | Introduction                              | NRC/BG&E |
| II.  | Loss of Offsite Power Analysis            | BG&E     |
| III. | Coping Duration                           | BG&E     |
| IV.  | Alternate and 4 hr. AC Independent Coping | BG&E     |
| V.   | Discussion                                | NRC/BG&E |

1987 L.O.O.P. EVENT

CALVERT CLIFFS

- AREA TRANSMISSION GRID
- CONNECTION TO GRID
- DESCRIPTION OF EVENT
- ROOT CAUSES &  
CORRECTIVE ACTIONS
- FUTURE ENHANCEMENTS
- P2 VERSUS P3

KEY:

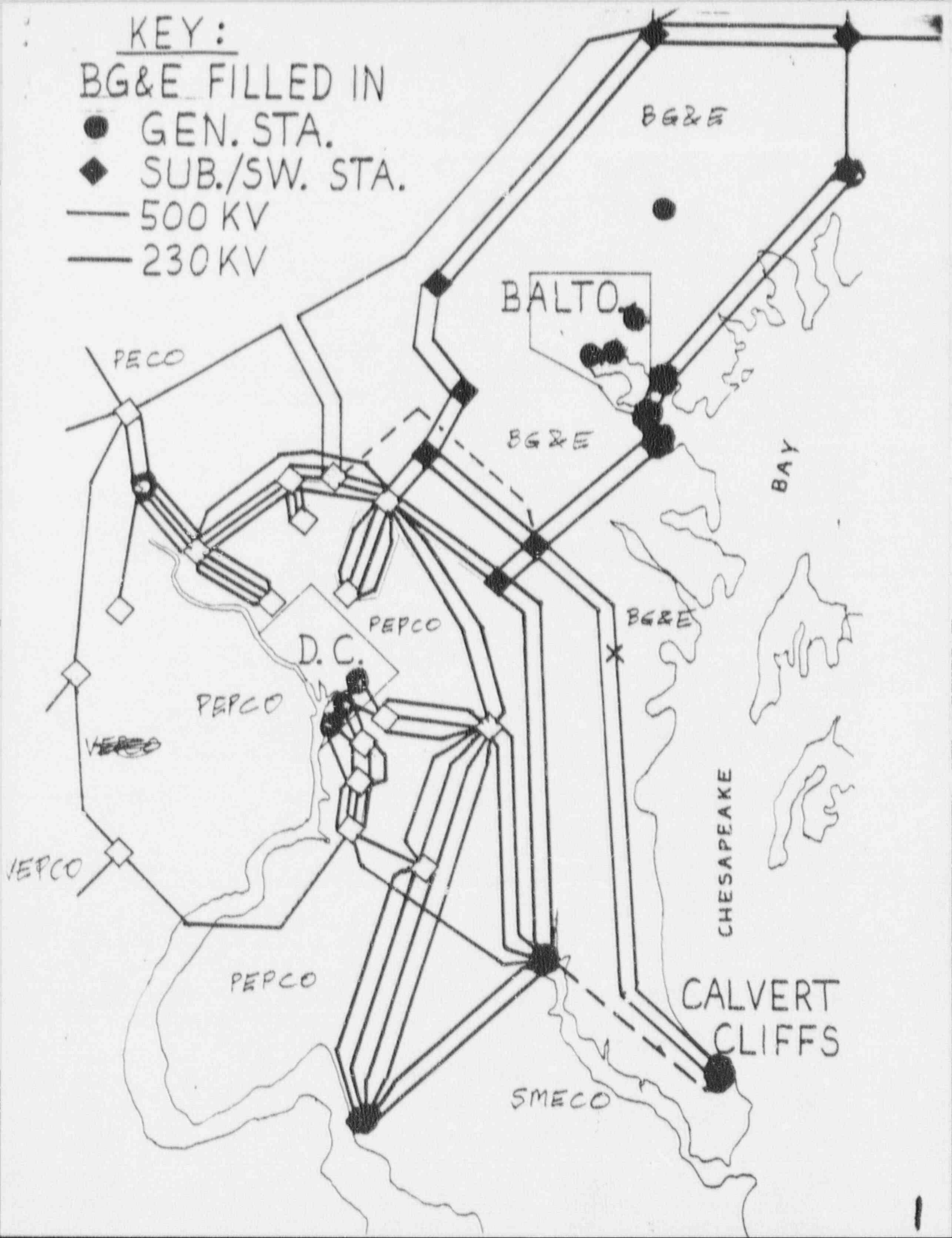
BG&E FILLED IN

● GEN. STA.

◆ SUB./SW. STA.

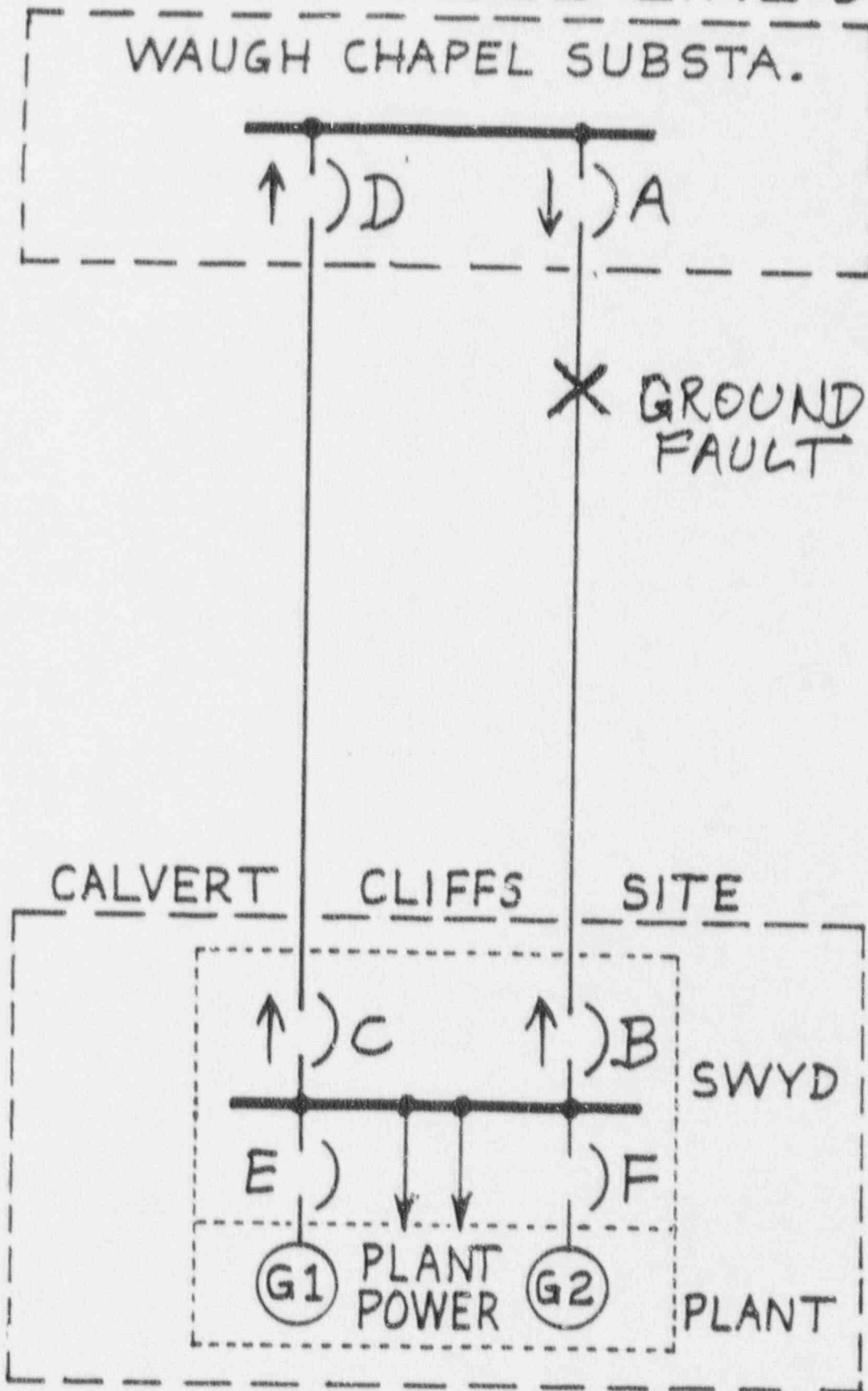
— 500 KV

— 230 KV





# SIMPLIFIED SINGLE LINE DIAG.



NORM. SAG

MAX. SAG

25'

DANGER  
TREE

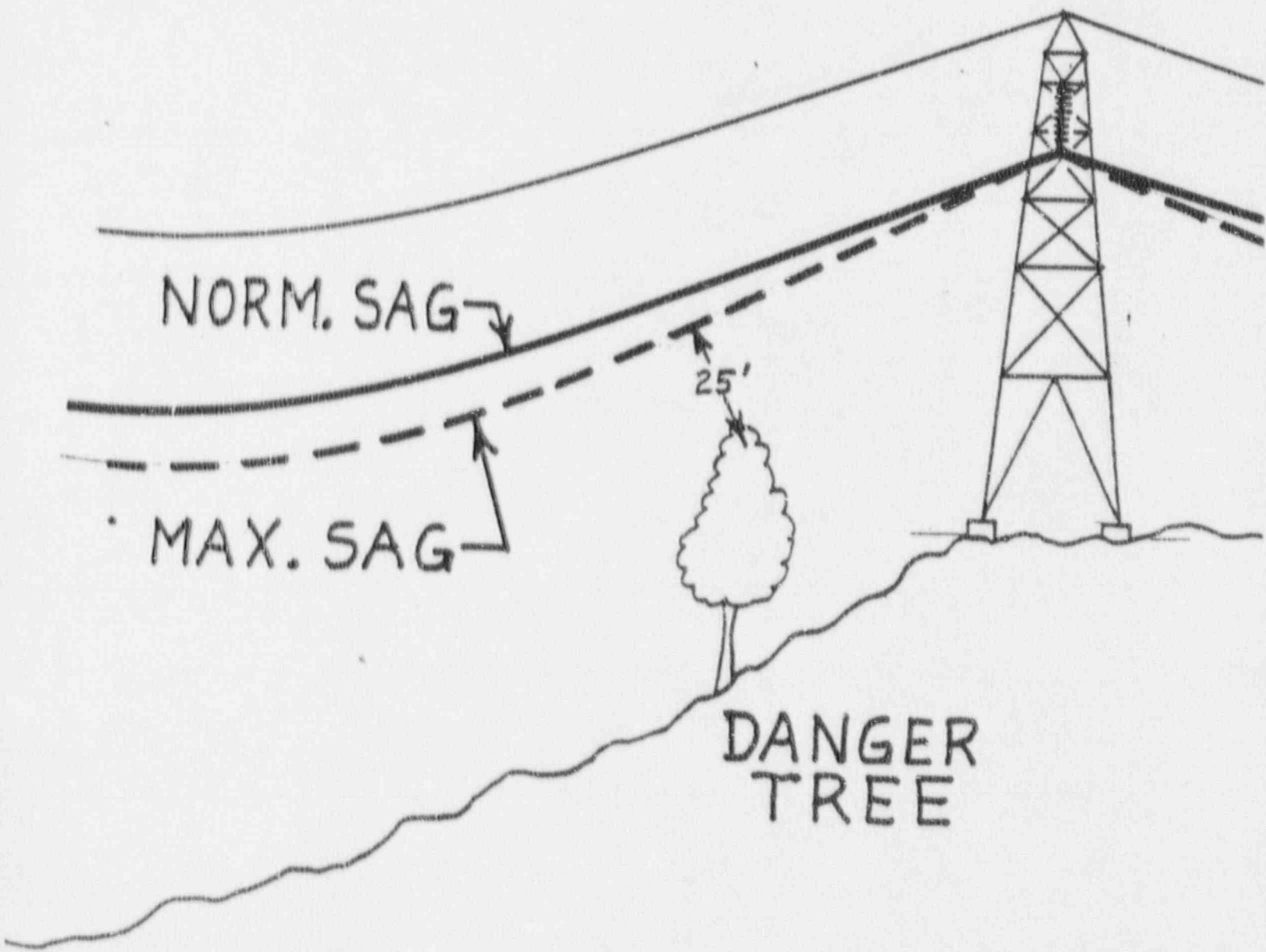
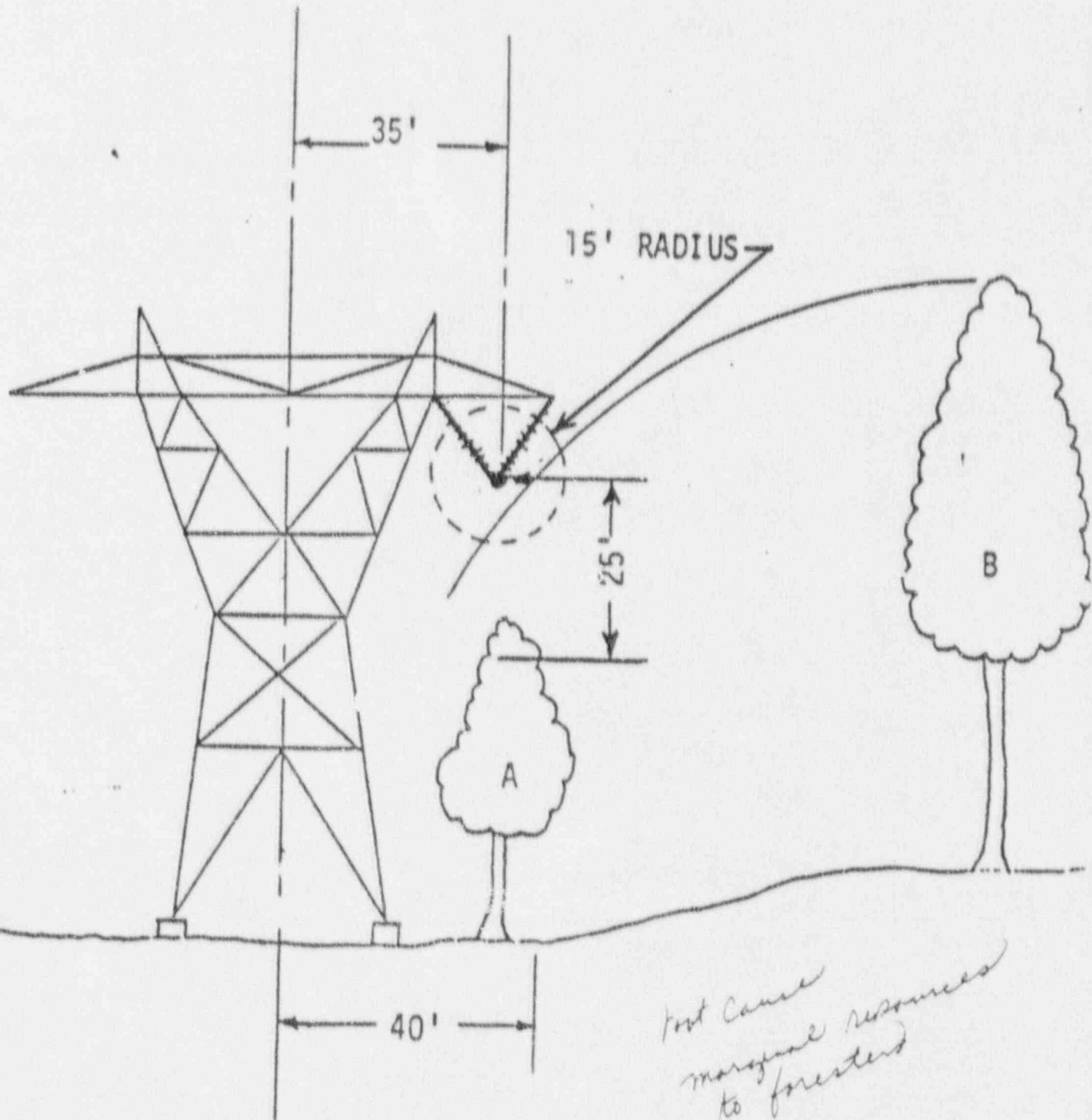


EXHIBIT I  
FROM SPEC FOR  
PHOTOGRAMMETRIC DANGER  
TREE SURVEY



TYPICAL DANGER TREES

- A = TREE WITHIN 40 FT. OF CENTERLINE
- B = TREE BEYOND 40 FT. OF CENTERLINE