APPENDIX C

ADVERSE WEATHER EVACUATION
TIME ESTIMATES

QUAD CITIES STATION

March, 1981

# APPENDIX C

## ADVERSE WEATHER EVACUATION TIME ESTIMATES

### Introduction

This appendix supplements the "Preliminary Evacuation Time Study of the 10-Mile Radius Emergency Planning Zone at the Quad Cities Station". Presented in this appendix is an assessment of the effect on the previously developed evacuation time estimates of adverse weather considerations. This assessment compliments the Preliminary Evacuation Time Study and conforms to the background, methodology and assumptions used in it.

### Assumptions

The basic methodologies used for this adverse weather evacuation assessment are as discussed in Appendix A to the original study. The adverse weather assessment uses the same evacuation sectors and evacuation routes as well as the same number of vehicles to be evacuated as used in the original study.

For this assessment, the evacuation travel times associated with the fair weather best estimate evacuation times for the general population were modified to reflect a 30% decrease in roadway capacity due to inclement weather circumstances. The evacuation travel times for special facilities in the original study were modified to reflect a 30% decrease in evacuation travel speeds due to inclement weather circumstances. These assumptions have the advantage of being able to represent a range of different adverse weather conditions - snow, fog, ice, etc. - rather than just a single weather scenario.

### Results

The estimated times for the evacuation of the general population during adverse weather within the 10-mile EPZ around Quad Cities Station are presented in Table C-1. The notification and moblization times are the same as those used in the original study. The evacuation travel times were developed assuming a 30% decrease in the traffic capacity of the evacuation routes due to adverse weather circumstances.

The estimated evacuation travel times for evacuating the special facilities, during adverse weather, within the 10-mile EPZ around Quad Cities Station are presented in Table C-2. The evacuation travel times were developed assuming a 30% decrease in the evacuation speed used in the original study due to adverse weather circumstances.

TABLE C-1

QUAD CITIES STATION

ESTIMATED EVACUATION TIME OF THE GENERAL POPULATION DURING ADVERSE WEATHER WITHIN 10 MILES OF THE QUAD CITIES STATION

| Zone/Sector | Estimated 1980 Evacuation Population | Estimated Adverse Weather Evacuation Time: Estimated Notification Time In Excess Of 15 Minutes (Minutes)* | Estimated Mobilization Time (Minutes)* | Estimated Evacuation Travel Time Adverse Weather (Hours) | Estimated Total Evacuation Time Adverse Weather (Hours)** |
|---|---|---|---|---|---|
| 0-2 Miles | | | | | |
| Sector I | 45 | 20 | 20 | 2.3 | 3 |
| Sector II | 995 | 60 | 20 | 5.2 | 7 |
| 0-5 Miles | | | | | |
| Sectors I,V | 1,350 | 90 | 20 | 7.3 | 9 |
| Sectors I,VI | 3,115 | 70 | 20 | 8.3 | 10 |
| Sectors II,III | 1,560 | 85 | 20 | 8.6 | 11 |
| Sectors II,IV | 2,200 | 100 | 20 | 6.5 | 9 |

* See Table 3-1 in original study.
** Rounded to the nearest hour.

TABLE C-1 (continued)

QUAD CITIES STATION

ESTIMATED EVACUATION TIME OF THE GENERAL POPULATION DURING ADVERSE WEATHER WITHIN 10 MILES OF THE QUAD CITIES STATION

| | | Estimated Adverse Weather Evacuation Time | | | |
|---|---|---|---|---|---|
| Zone/Sector | Estimated 1980 Evacuation Population | Estimated Notification Time In Excess Of 15 Minutes (Minutes)* | Estimated Mobilization Time (Minutes)* | Estimated Evacuation Travel Time Adverse Weather (Hours) | Estimated Total Evacuation Time Adverse Weather (Hours)** |
| 0-10 Miles | | | | | |
| Sectors I,V,IX | 5,310 | 100 | 20 | 9.4 | 12 |
| Sectors I,VI,X | 47,925 | 95 | 20 | 14.3 | 16 |
| Sectors II,III,VI | 2,360 | 110 | 20 | 9.8 | 12 |
| Sectors II,IV,VIII | 8,115 | 85 | 20 | 8.9 | 11 |

* See Table 3-1 in original study.
** Rounded to the nearest hour.

TABLE C-2

QUAD CITIES STATION

SPECIAL FACILITIES ESTIMATED EVACUATION TRAVEL TIMES
DURING ADVERSE WEATHER

| Facility Type | Maximum Travel Distance (Miles) | Estimated Travel Time* (Hours) |
|---|---|---|
| School | 8.5 | 0.60 |
| Day Care | 2.4 | 0.20 |
| Recreation Area | 5.0 | 0.35 |

* Based on an assumed 14 mph travel speed - Refer to Table A-4 in original study.