1.0 INTRODUCTION

This submittal was originally prepared in response to the NRC requests of September 30, 1976. The Byron/Braidwood Fire Protection Report compares the fire protection provisions of the plant with guidelines of Appendix A to Branch Technical Position 9.5-1 and provides the results of the fire hazards analysis in the form described in Enclosure 2 of the September 30, 1976, letter.

In this report, the defense-in-depth concept has been followed by considering procedures, fire protection capabilities, and safe shutdown capabilities. Based on the analysis, it was concluded that safe shutdown capability exists despite a postulated fire in any area or zone. It is concluded that the fire protection program at Byron/Braidwood Stations Units 1 and 2 is adequate to prevent undue risk to public health and safety.

This report describes the existing facility. The fire protection system is reflected on the color coded general arrangement drawings. A detailed description is given in Section 2.3 "Fire Area Analysis," Section 2.4, "Safe Shutdown Analysis," and in Chapter 3.0 "Guidelines of Appendix A."

Revision 1 is a complete update to this report. All the information has been checked and revised where necessary to reflect the current plant design. Chapter 3.0 "Guidelines of Appendix A" has been revised to describe conformance to BTP CMEB 9.5-1, the current revision of this document. A section has also been added describing conformance to 10 CFR 50 Appendix R "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979." Finally, a new Section 2.4 "Safe Shutdown Analysis" has been added which provides the analysis of the effects of fire on electrical cables required for instruments and equipment required to shut down the plant.

The Nuclear Regulatory Commission approved the transfer of the facility licenses from Commonwealth Edison (ComEd) Company to Exelon Generation Company, LLC (EGC) on August 3, 2000 (Reference 1). However, many references to ComEd, CECo, and Commonwealth Edison in this report have been retained, as appropriate, to preserve the historical context instead of being changed to EGC.

Reference 1: Letter from Ms. Donna M. Skay (NRC) to Mr. Oliver D. Kingsley (ComEd), subject: Braidwood, Byron, Dresden, La Salle, Quad Cities, and Zion - Orders approving transfer of licenses from Commonwealth Edison Company to Exelon Generation Company, LLC and approving conforming amendments (TAC Nos. MA7727, MA7728, MA7729, MA7730, MA7962, MA7721, MA7722, MA7715, MA7716, MA7717, MA7718, MA7770, and MA7771), dated August 3, 2000.

1.1 Fire Protection Evaluation

The report responds fully to the NRC requests by using Branch Technical Position CMEB 9.5-1 as the subject headings. For each heading of BTP CMEB 9.5-1, Chapter 3.0 shows:

a. Guidelines of the BTP which are presently met;
b. Procedures or training of personnel underway such that the guidelines will be met; and
c. Guidelines which are not presently met and for which in the future justification for deviation is documented in Section 2.0, "Fire Hazards Analysis."

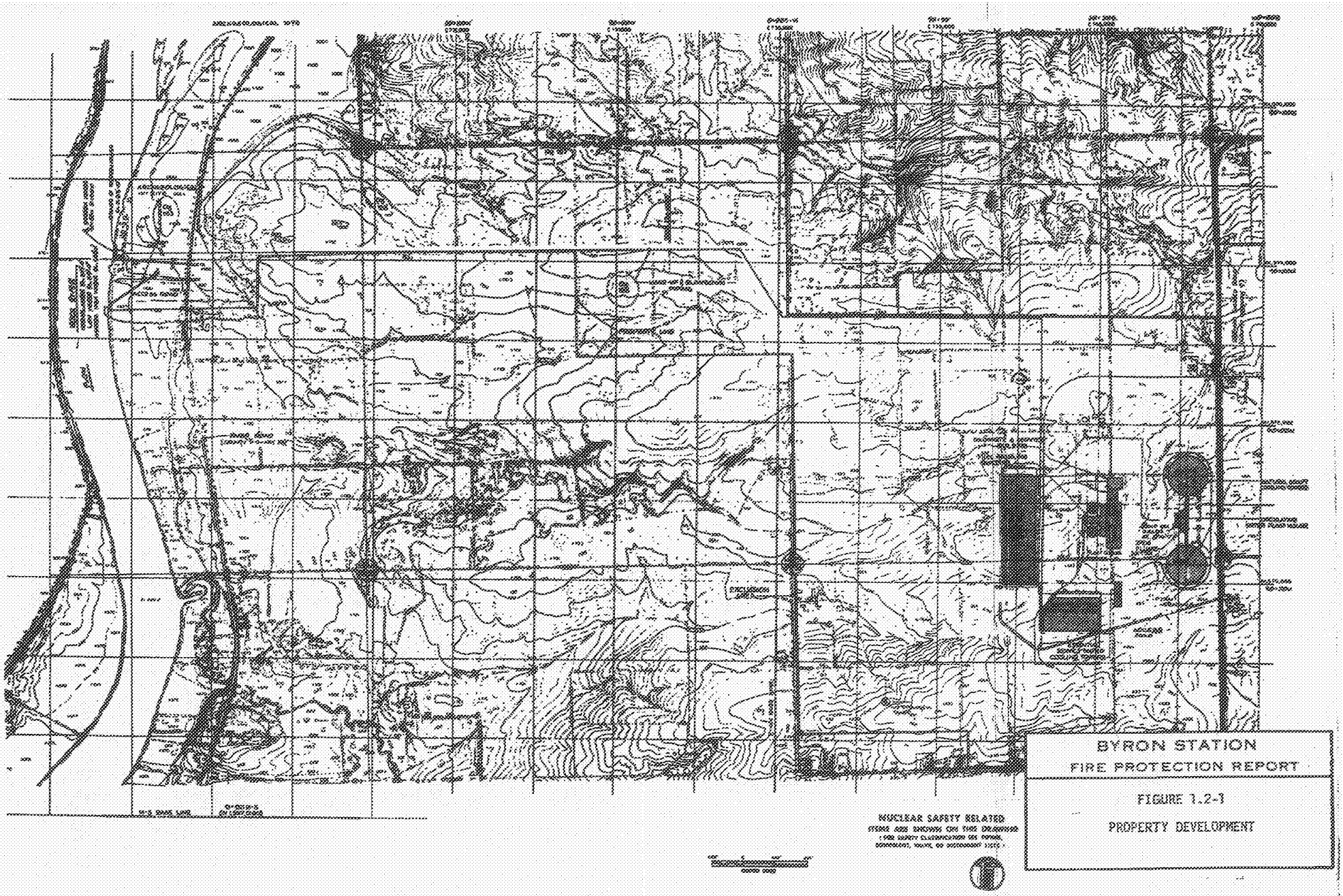
1.2 General Description of Facility

The Byron Station is located in north central Illinois, near the town of Byron and near the Rock River (Figure 1.2-1). Cooling for the plant is provided by two natural draft cooling towers and, for essential service cooling, by two smaller mechanical draft cooling towers. The fuel loading dates for the units are November 1984 and November 1986 for Units 1 and 2, respectively. The corresponding dates for commercial operation are September 1985 and August 1987.

The Braidwood Station is located in northeastern Illinois, near the town of Braidwood and near the Kankakee River (Figure 1.2-2). Cooling for the plant is provided by a man-made lake constructed over a previously strip-mined area. Essential service cooling is provided by a 99-acre auxiliary cooling pond which is integral with the main lake. The fuel loading dates for the two units are October 1986 and December 1987 for Units 1 and 2, respectively. The corresponding dates for commercial operation are July 1988 and October 1988.

The nuclear power plants each consist of two identical generating units, each employing a pressurized water reactor nuclear steam supply system furnished by Westinghouse Electric Corporation and are similar in design concept to several projects recently licensed or currently under review by the Nuclear Regulatory Commission. Westinghouse Electric Corporation, Sargent & Lundy, and the Commonwealth Edison Company have jointly participated in the design and construction of each unit. The plants are operated by the Commonwealth Edison Company.

Each nuclear steam supply system is designed for a power output of Uprated Nuclear Steam Supply System (NSSS) Power of 3672 MWt, which includes a Reactor Coolant Pump (RCP)net heat input of 14 MWt and a Measurement Uncertainty Recapture MUR Uprate of 2% (Ref. Calculation CN-PCWG-08-23 Rev. 0) which is the license application rating.

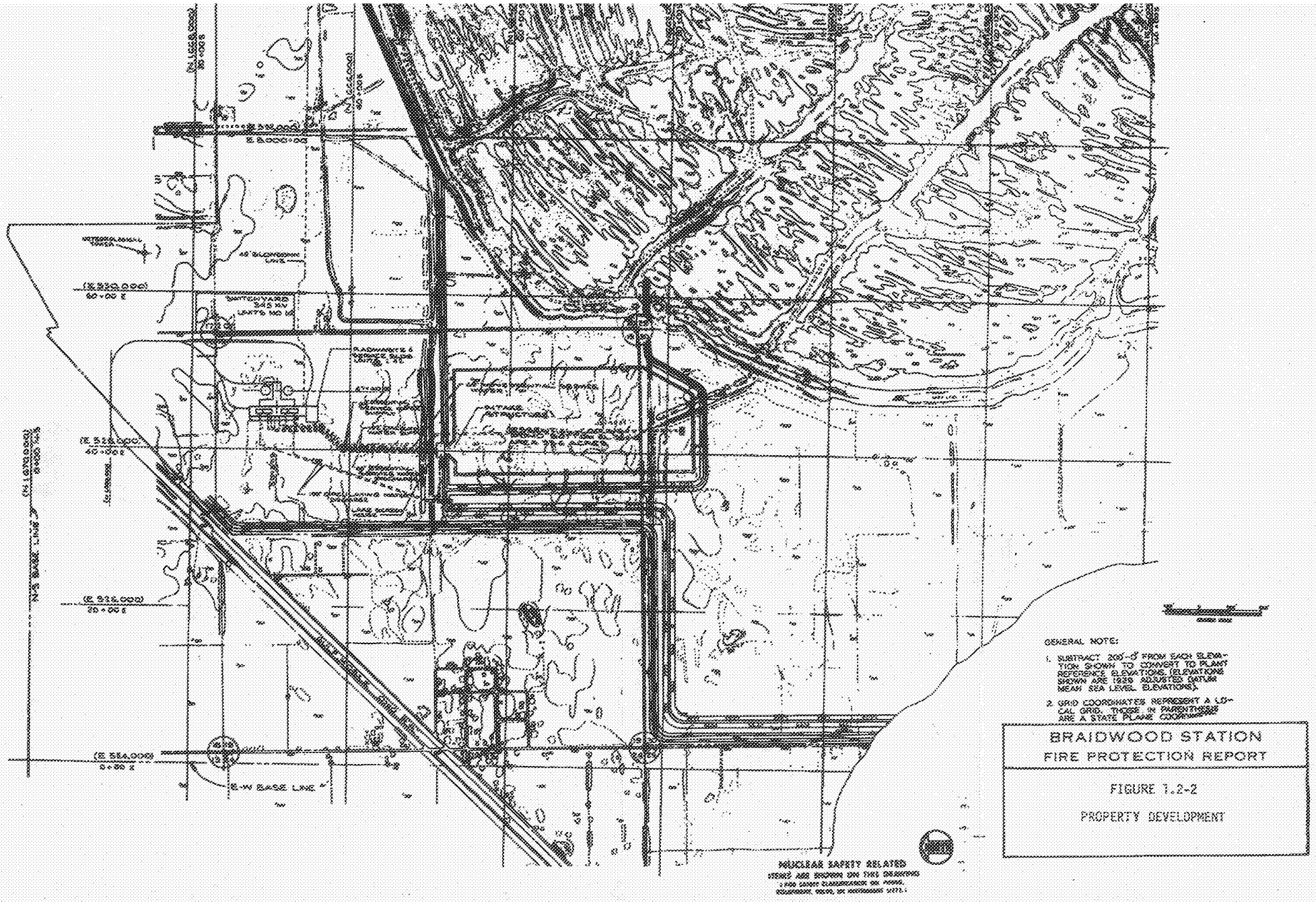


BYRON STATION

FIRE PROTECTION REPORT

FIGURE 1.2-1

PROPERTY DEVELOPMENT



BRAIDWOOD STATION
FIRE PROTECTION REPORT

FIGURE 1.2-2

PROPERTY DEVELOPMENT