8A Miscellaneous Electrical Systems

The information in this appendix of the reference ABWR DCD, including all Subsections and figures, is incorporated by reference with the following departures and supplements.

STP DEP 1.1-2 (Figure 8A-1)

STD DEP 8A.1-1

STD DEP Admin

8A.1.1 Description

STP DEP 1.1-2

STD DEP Admin (making the type of grounding consistent with ABWR DCD Subsections 8.3.1.0.6.2 and 8.3.1.1.6.2).

The electrical grounding system is comprised of:

(3) A plant grounding grid shared between STP Units 3 & 4

The onsite, medium-voltage AC distribution system is low *resistance grounded at the neutral point of the low-voltage windings of the unit auxiliary and reserve transformers.*

8A.1.2 Analysis

STD DEP 8A.1-1

~~*No SRP or regulatory guidance is provided for the grounding and lightning protection system.*~~ Regulatory guidance for the lightning protection system is provided in Regulatory Guide 1.204. ~~*It is*~~ The grounding and lightning protection systems are *designed and required to be installed to the applicable sections of the following codes and standards.*

(5) IEEE-666, Design Guide for Electric Power Service Systems for Generating Stations (Reference 8A-8)

(6) IEEE-1050, Guide for Instrumentation and Control Equipment Grounding in Generating Stations (Reference 8A-9)

(7) IEEE-C62.23, Application Guide for Surge Protection of Electric Generating Plants (Reference 8A-10)

8A.1.3 COL License Information

The following site-specific supplement addresses the COL License Information Item discussed in this subsection.

Ground resistance measurements will be performed per guidance provided by IEEE-81 to determine that the required value of one ohm or less has been met and additions

to the system will be made, if necessary, to meet the target resistance after site preparation and prior to construction of the permanent buildings. The FSAR will be updated in accordance with 10 CFR 50.71(e) to reflect the results of these evaluations. (COM 8A-1)

8A.2.3 COL License Information

The following standard supplement addresses the COL License Information Item discussed in this subsection.

The design of the cathodic protection system meets the following minimum requirements consistent with the requirements in Chapter 11, Section 9.4 of the Utility Requirements Document issued by the Electric Power Research Institute (Reference 8A-5).

(1) The need for cathodic protection on the entire site, portions of the site, or not at all is determined by analyses. The analyses are based on soil resistivity readings, water chemistry data, and historical data from the site gathered from before commencement of site preparation to the completion of construction and startup.

(2) Where large protective currents are required, a shallow interconnected impressed current system consisting of packaged high silicon alloy anodes and transformer-rectifiers are normally used. The rectifiers are approximately 50% oversized in anticipation of system growth and possible higher current consumption.

(3) The protected structures of the impressed current cathodic protection system are connected to the station grounding grid.

(4) Localized sacrificial anode cathodic protection systems are used where required to supplement the impressed current cathodic protection system and protect surfaces which are not connected to the station grounding grid or are located in outlying areas.

(5) Prepackaged zinc-type reference electrodes are permanently installed near poorly accessible protected surfaces to provide a means of monitoring protection level by measuring potentials.

(6) Test stations above grade are installed throughout the station adjacent to the areas being protected for termination of test leads from protected structures and permanent reference electrodes.

~~*8A.3.4*~~ 8A.4 References

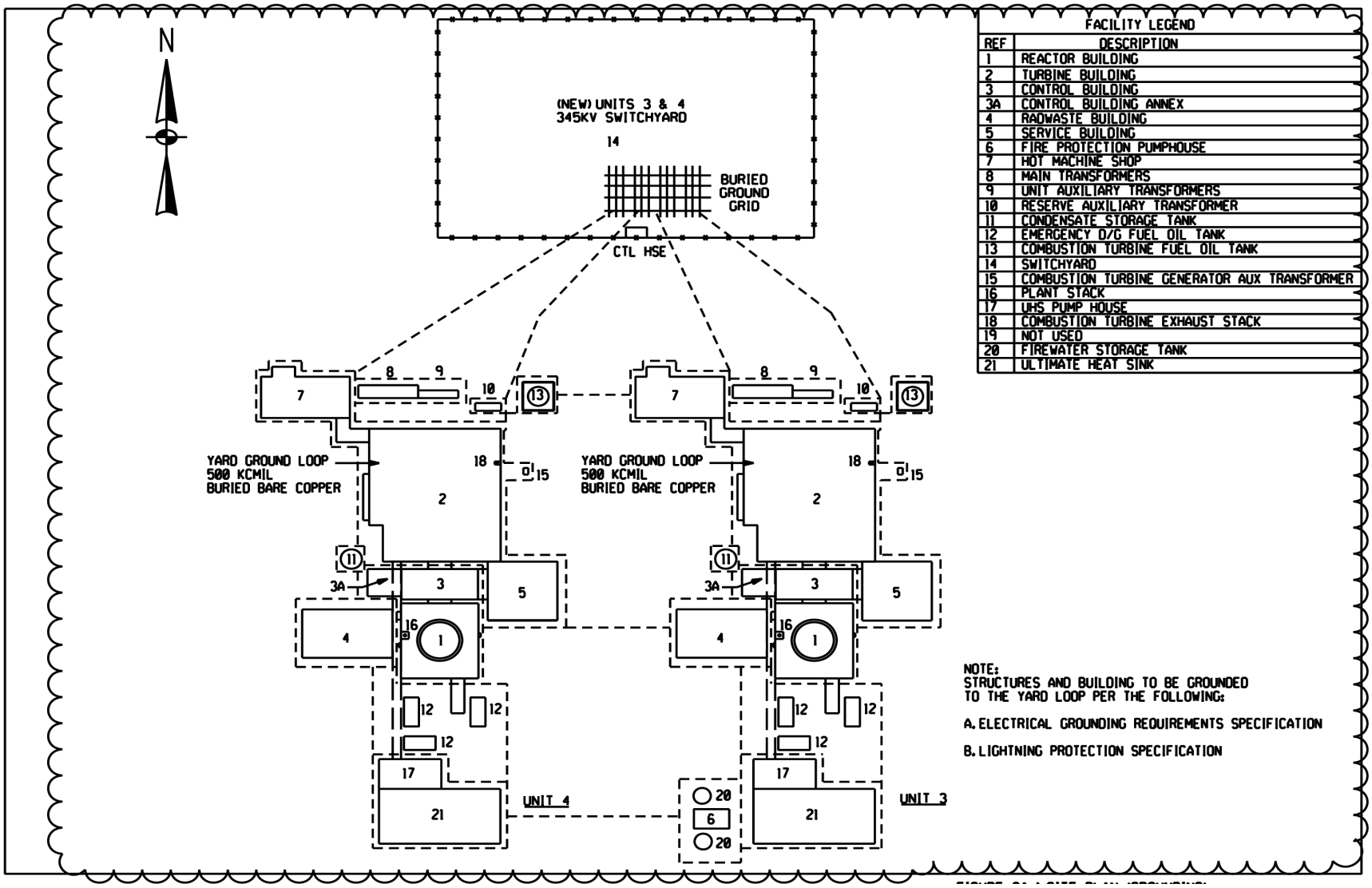
STD DEP Admin

The following standard supplement addresses new references:

8A-8 IEEE-666, Design Guide for Electric Power Service Systems for Generating Stations

8A-9 IEEE-1050, Guide for Instrumentation and Control Equipment Grounding in Generating Stations

8A-10 IEEE-C62.23, Application Guide for Surge Protection of Electric Generating Plants



FACILITY LEGEND

REF	DESCRIPTION
1	REACTOR BUILDING
2	TURBINE BUILDING
3	CONTROL BUILDING
3A	CONTROL BUILDING ANNEX
4	RADWASTE BUILDING
5	SERVICE BUILDING
6	FIRE PROTECTION PUMPHOUSE
7	HOT MACHINE SHOP
8	MAIN TRANSFORMERS
9	UNIT AUXILIARY TRANSFORMERS
10	RESERVE AUXILIARY TRANSFORMER
11	CONDENSATE STORAGE TANK
12	EMERGENCY D/G FUEL OIL TANK
13	COMBUSTION TURBINE FUEL OIL TANK
14	SWITCHYARD
15	COMBUSTION TURBINE GENERATOR AUX TRANSFORMER
16	PLANT STACK
17	UHS PUMP HOUSE
18	COMBUSTION TURBINE EXHAUST STACK
19	NOT USED
20	FIREWATER STORAGE TANK
21	ULTIMATE HEAT SINK

Figure 8A-1 Site Plan (Grounding)