

Demolition/Relocation Requirements Unit 1

1.0 Introduction

The purpose of this description is to describe the conceptual demolition and/or relocation requirements of the Brown Plant existing site structures. The description covers, in general, the work involving the major items to be demolished or relocated. The following demolitions/relocations activities are listed in the sequential order they will be performed. In addition, it is expected that numerous small individual components, such as stairs, ladders, ductwork sections, ground slabs, etc., will require demolition and/or relocation to complete the works included in the scope of the Phase II AQC study. The specific impact on any one existing structure cannot be determined until the new equipment and structures have been procured and designed. Therefore, actual demolition/relocation requirements, including order of activities, will be determined during detailed design.

2.0 Requirements

2.1 Parking Lot

Installation of the Phase II AQCS modifications for Units 1 and 2 will take up significant area in the existing parking lot northeast of the Unit 1/Unit 2 powerhouse, specifically the majority of space north of Column Line A to the conveyors on the east and north. Additional portions of the existing parking lot will be reserved for the PAC and sorbent silos, plus truck access and unloading lanes adjacent to the silos. The existing parking lot must be refigured accordingly.

A preliminary review of the remaining asphalt-paved parking lot indicates that the space can be refigured to accommodate the 60 and 70 car-sized parking spaces identified by LG&E/KU as required for normal operation and maintenance outages.. This assumes several unused obstacles, such as the temporary loading dock north of Unit 1 and dumpsters, are removed. The lanes between the parking spaces would be available as truck access lanes to the silos as well as traffic lanes within the parking lot. The reconfigured parking lot would require new painted lane and parking space markings, as well as new signage to properly direct traffic and prevent blockage of access to the new AQCS area and the silos. If additional parking is required for major project work, new parking areas will be identified at the time.

2.2 Unit 1 Interior Ductwork, Air Heater, and FD Fan

Connection of the new Unit 1 FD fan, air heater, and SCR module will require extensive modification of the existing ductwork inside the Unit 1 portion of the common powerhouse. The U-shaped combustion air plenum that is routed across the back and

sides of the boiler just inside the north wall of the building will have to be cut into two side sections and the base of the U removed to make way for new ductwork. The new combustion air ductwork will connect to and supply the remaining portion of the existing plenum along the sides of the boiler.

Similarly, the existing hot-side ductwork below the existing air heater will have to be cut and connected to new ductwork exiting the north side of the building through the area opened up by the partial removal of the combustion air plenum. Due to the very poor access, difficulty is expected in removal, and with the relatively poor usability of the space occupied, both the existing air heater and FD fan are assumed to be abandoned in place. If a use is found for that space that justifies their removal, the bypassed equipment can be removed.

Existing ductwork inside the building will also be modified by the addition of economizer bypass ductwork. This will be a series of smaller ducts, including controlling dampers, connecting the duct upstream and downstream of the existing Unit 1 economizer. Final routing of this ductwork, and thus the required modifications to existing duct, will be determined at time of detailed design.

2.3 Unit 1 Boiler Building

Portions of the north wall of the Common Unit 1/Unit 2 Powerhouse north of the Unit 1 boiler will require modification and removal to allow installation of the ductwork serving Unit 1 from the remote equipment. Girts, metal panel, and architectural finishes will require removal to install the duct and partial replacement/improvement to complete a weathertight seal around the penetrating ductwork and a restored matching facade.

2.4 Water Treatment Building and Chemical Tanks

The new ductwork between the Unit 1 and Unit 2 boiler areas and the remote FD fans, air heaters, and SCRs must be routed through the area immediately north of the Common Unit 1/Unit 2 Powerhouse building. Existing unused chemical tanks, small pumps, and the old Water Treatment Building lie in this area. This equipment must be demolished to allow installation of the foundations and support steel for the ductwork. Since these items are no longer in use, they will not be replaced once demolished. Other equipment in this area, such as Unit 1 circulating water pipe, must remain in service and will be worked around during installation of the ductwork supports.

2.5 Ductwork into the Unit 1 ID Fan Inlet

New ductwork downstream of the Unit 1 PJFF outlet will be routed to the inlet flange of the existing Unit 1 ID fan, which will be reused in place. Portions of the existing ductwork between the Unit 1 ESP and the ID fan must be removed as required to allow the connection. However, the existing duct also includes a NFPA 85 vent for Unit 1. to retain this vent, the existing duct above the ID fan inlet must be retained in place, although isolated during normal operation with a new damper.. The existing support

steel around the ductwork will also be reused in place to the extent practical. The portion of the existing duct not required to be removed to make the new connection and to retain the NFPA 85 vent, and the ESP upstream, are intended to be abandoned in place or removed to the extent required for stability. Permanent duct blanks will be installed in the existing ductwork as required to isolate the abandoned ductwork while retaining the required duct in service.

2.6 Original Oil Storage Building

A small oil storage building exists at the north end of the existing parking lot area to be occupied by the Unit 1/Unit 2 AQCS modifications. LG&E/KU is in the process of building a replacement oil storage building elsewhere on site. The original oil storage building can be demolished to make room for new equipment and need not be replaced.

Demolition/Relocation Requirements Unit 2

1.0 Introduction

The purpose of this description is to describe the conceptual demolition and/or relocation requirements of the Brown Plant existing site structures. The description covers, in general, the work involving the major items to be demolished or relocated. The following demolitions/relocations activities are listed in the sequential order they will be performed. In addition, it is expected that numerous small individual components, such as stairs, ladders, ductwork sections, ground slabs, etc., will require demolition and/or relocation to complete the works included in the scope of the Phase II AQC study. The specific impact on any one existing structure cannot be determined until the new equipment and structures have been procured and designed. Therefore, actual demolition/relocation requirements, including order of activities, will be determined during detailed design.

2.0 Requirements

2.1 Parking Lot

Installation of the Phase II AQCS modifications for Units 1 and 2 will significantly impact the existing parking lot northeast of the Unit 1/Unit 2 powerhouse. This is described in more detail in the Demolitions/Relocation Requirements documented for Unit 1 16908.41.0804.5.B1.

2.2 Unit 2 Interior Ductwork, Air Heater, and FD Fan

Connection of the new Unit 2 FD fan, air heater, and SCR module will require modification of the existing ductwork inside the Unit 2 portion of the common powerhouse. New ductwork will be installed to bypass the existing FD fan inside the building and the air side of the existing air heater. Additional new ductwork will be installed connecting to the ductwork downstream of the economizer to bypass the gas side of the existing air heater. Existing ductwork and the existing air heater will be demolished and removed to the extent required to complete these connections.. Due to poor access, difficulty is expected in removal, and with the relatively poor usability of the space occupied, the existing FD fan is assumed to be abandoned in place. If a use is found for that space that justifies their removal, the bypassed fan can be removed.

Existing ductwork inside the building will also be modified by the addition of economizer bypass ductwork. This will be a series of smaller ducts, including controlling dampers, connecting the duct upstream and downstream of the existing Unit 1 economizer. Final routing of this ductwork, and thus the required modifications to existing duct, will be determined at time of detailed design.

2.3 Unit 2 Boiler Building

Portions of the north wall of the Common Unit 1/Unit 2 Powerhouse north of the Unit 2 boiler will require modification and removal to allow installation of the ductwork serving Unit 2 from the remote equipment. Girts, metal panel, and architectural finishes will require removal to install the duct and partial replacement/improvement to complete a weathertight seal around the penetrating ductwork and a restored matching façade.

2.4 Water Treatment Building and Chemical Tanks

The new ductwork between the Unit 1 and Unit 2 boiler areas and the remote FD fans, air heaters, and SCRs will require demolition and removal of existing equipment immediately north of the Common Unit 1/Unit 2 Powerhouse building. This is described in more detail in the Demolitions/Relocation Requirements documented for Unit 1, File 168908.41.0804.5.B1.

2.5 Unit 2 ID Fans

The two existing Unit 2 ID fans will be removed from their current location and the motors refurbished for reuse on the new Unit 1 and Unit 2 FD fans. Ductwork upstream and downstream of the fans will be removed as required to allow connection of new Unit 2 ductwork downstream of the new Unit 2 ID fan. Remaining ductwork downstream of the Unit 2 ESPs will be removed as required for stability or abandoned in place.

2.6 Original Oil Storage Building

A small oil storage building exists at the north end of the existing parking lot area to be occupied by the Unit 1/Unit 2 AQCS modifications and will be demolished. This is described in more detail in the Demolitions/Relocation Requirements documented for Unit 1 168908.41.0804.5.B1.

Demolition/Relocation Requirements Unit 3

1.0 Introduction

The purpose of this description is to describe the conceptual demolition and/or relocation requirements of the Brown Plant existing site structures. The description covers, in general, the work involving the major items to be demolished or relocated. The following demolitions/relocation activities are listed in the sequential order they will be performed. In addition, it is expected that numerous small individual components, such as stairs, ladders, ductwork sections, ground slabs, etc., will require demolition and/or relocation to complete the work included in the scope of the Phase II AQC study. The specific impact on any one existing structure cannot be determined until the new equipment and structures have been procured and designed. Therefore, actual demolition/relocation requirements, including sequence of execution, will be determined during detailed design.

2.0 Requirements

2.1 Electrostatic Precipitators

A portion of the Unit 3 original electrostatic precipitators (ESP) will be demolished in order to tie-in the ductwork for the new pulse jet fabric filter (PJFF). Demolition of the ESPs will be limited to the inlet sections and, to the extent it can be avoided, not the ESP fields themselves. The undemolished portions of the original ESPs and the secondary ESPs added subsequently are intended to be blanked off and abandoned in place. Should a use be found for the area occupied by the ESPs that justifies the cost of demolition, the ESPs can be removed at a later date at LG&E/KU's convenience.

2.2 Existing Warehouse No. 3

Existing Warehouse No. 3 located south of the WFGD must be demolished to make room for the Unit 3 PJFF and associated structures. Additional warehouse space is not expected to be required and Warehouse 3 will not be replaced.

2.3 Ductwork from ESPs to ID Fans

Portions of the ductwork downstream of the existing ESPs and upstream of the existing ID fans will be retained to provide a necessary NFPA 85 vent to the old Unit 3 chimney as described in Modifications, Interfaces, and Tie-Ins, File 168908.41.0804.1.B03. Other existing ductwork not required to maintain this vent can be abandoned in place or demolished. The steel superstructure supporting the duct must remain in place to support the vent ductwork.