Progress Energy

Serial: NPD-NRC-2011-070
September 29, 2011

10 CFR 52.80

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

SHEARON HARRIS NUCLEAR POWER PLANT, UNITS 2 AND 3
DOCKET NOS. 52-022 AND 52-023
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION FOR THE ENVIRONMENTAL REVIEW – GIS DATA NEEDS

References:

1. Letter from Donald E. Palmrose (NRC) to John Elnitsky (PEC), dated January 13, 2011, "Request for Additional Information for the Environmental Review of the Combined License Application for the Shearon Harris Nuclear Power Plant, Units 2 and 3"

2. Letter from Robert H. Kitchen (PEC) to U. S. Nuclear Regulatory Commission (NRC), dated February 11, 2011, "Proposed Schedule for Transmittal of Requested Information Supporting the Environmental Review", Serial: NPD-NRC-2011-012

3. Letter from John Elnitsky (PEC) to NRC, dated March 31, 2011, "Response to Request for Additional Information for the Environmental Review – Need for Power", Serial: NPD-NRC-2011-030

Ladies and Gentlemen:

Progress Energy Carolinas, Inc. (PEC) hereby submits a response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in Reference 1.

A response to NRC RAI Number 3.1-1 is addressed in the enclosure. The enclosure also identifies changes that will be made in a future revision of the Shearon Harris Nuclear Power Plant Units 2 and 3 application.

If you have any further questions, or need additional information, please contact Bob Kitchen at (919) 546-6992, or me at (727) 820-4481.

Progress Energy Carolinas, Inc.
P.O. Box 1551
Raleigh, NC 27602

D084
NRO

I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 29, 2011.

Sincerely,

John Elnitsky
Vice President
New Generation Programs & Projects

Enclosure/Attachments

cc : (Attachments with disc)
Mr. Brian Hughes, U.S. NRC Project Manager
Dr. Donald E. Palmrose, U. S. NRC Senior Project Manager

cc : (Attachments without disc)
U.S. NRC Region II, Regional Administrator
U.S. NRC Resident Inspector, SHNPP Unit 1

Shearon Harris Nuclear Power Plant Units 2 and 3
Response to NRC Request for Additional Information for the Environmental Review of the Combined License Application, dated January 13, 2011

NRC RAI #	Progress Energy RAI #	Progress Energy Response
1.1.7-1	H-0655	NPD-NRC-2011-030; March 31, 2011
8.0-1	H-0656	NPD-NRC-2011-030; March 31, 2011
8.3-1	H-0657	NPD-NRC-2011-030; March 31, 2011
8.3-2	H-0658	NPD-NRC-2011-030; March 31, 2011
8.3-3	H-0659	NPD-NRC-2011-030; March 31, 2011
9.4-3	H-0660	NPD-NRC-2011-072; September 29, 2011
3.1-1	H-0661	Response enclosed – see following pages

NRC Letter No.: ER Supplemental

NRC Letter Date: January 13, 2011

NRC Review of Environmental Report

NRC RAI NUMBER: 3.1-1

Text of NRC RAI:

Provide GIS data, and associated metadata, for the following features:

Existing Layout Features Needed:

- HNP-1 (and HAR 2) 230-kV switchyard (ESRP 3.7; ER Fig 3.1-3 and/or Fig 4.0-2)
- HNP-1 blowdown piping and discharge pipeline (ER Fig 3.1-3)
- Any existing dredged material and other spoils storage areas

Construction & Preconstruction Layout Features Needed:

- Current update of GIS data already provided if it has changed since November 2008 (e.g., any changes in proposed layout of buildings, roads, rail lines, pipelines, transmission lines, etc.)
- Proposed new roads (e.g. new main access road (ER Fig 4.0-11), construction access road). These need to be differentiated from existing roads.
- Locations of proposed improvements to existing roads on site and immediate vicinity
- Disturbed area polygons for entire project (construction and preconstruction), including modifications to roads & facilities related to raising Harris Reservoir. This would include the areas described and shown on maps provided in the June 5, 2009 Supplement 2 to NRC RAIs, 001 Attachment 4.3.1-2A Figures 1 through 12. (ER Figs 4.0-7, 4.0-8, 4.0-9)
- Laydown area(s), assembly area(s), construction parking area(s), spoils stockpile or disposal areas (construction utilization plan)
- Concrete mixing facilities
- Harris Reservoir water level contour data between 220 and 240 ft NGVD29, (e.g. 220 ft, 225 ft, 230 ft, 235 ft, 240 ft)

Final (Post-Construction) Site Layout Features Needed:

- Any update to footprint of Cape Fear Makeup Water system (ESRP 3.3; Figs 4.0-4, 4.0-5)
- Any permanent structures not included in GIS data already provided (or those modified since November 2008)
- Permanent parking area(s)
- Unit 2 and 3 intake structure (ESRP 3.4.2; Figs 3.1-3, 4.0-2)
- HAR 3 230-kV switchyard and transmission lines connecting it to existing transmission system, including between HAR 3 and HNP- 1/HAR 2 switchyard if proposed (ESRP 3.7)
- Updates to transmission lines connecting HNP- 1/HAR 2 switchyard to existing transmission system (ESRP 3.7)

Other GIS Layers Needed:

- GIS data used to generate the Wetland Delineation map shown in ER Rev 2, Chapter 2 Appendix, or most recent update.
- Areas surveyed for threatened and endangered species

- Existing and proposed transmission line ROW between switchyards and first existing substation (all transmission that is part of single & complete project)-(these usually appear in Figures 2.1 Location or 2.2 Land Use)

In addition to GIS data and associated metadata for these pre-construction and construction features, provide a tabular summary that lists the features, the associated acreages that will be impacted, and identifies whether the impacts will represent a temporary or permanent loss of habitat.

PGN RAI ID #: H-0661

PGN Response to NRC RAI:

A number of adjustments have been made to the layout of the plant and ancillary infrastructure. The Computer-Aided Design (CAD) files that described these changes were converted into ArcGIS shapefiles. The following figures are attached that show the features with updated layouts and/or the information requested in RAI 3.1-1:

- HNP-1 (and HAR 2) 230-kV switchyard is shown in Attachment RAI 3.1-1A.
- HNP-1 blowdown piping and discharge pipeline is shown in Attachment RAI 3.1-1B as Existing Blowdown Pipeline.
- Any existing dredged material and other spoils storage areas are shown in Attachment RAI 3.1-1L as Spoils Area.
- Current update of GIS data is included in Attachment RAI 3.1-1J. The GIS files included are listed in Attachment RAI 3.1-1K.
- Proposed new roads are shown in Attachment RAI 3.1-1A, Attachment RAI 3.1-1C, Attachment 3.1-1D, and Attachment RAI 3.1-1I.
- Locations of proposed improvements to existing roads on the site and the immediate vicinity are shown in Attachment RAI 3.1-1D.
- Disturbed areas for the entire project are shown in Attachment RAI 3.1-1A, Attachment RAI 3.1-1E, and Attachment RAI 3.1-1L. Modifications to roads and facilities related to raising Harris Reservoir are shown in Attachment RAI 3.1-1D and Attachment RAI 3.1 1I.
- Laydown areas, assembly areas (included in laydown areas), construction parking areas, and spoils stockpile or disposal areas are shown in Attachment RAI 3.1-1L.
- Concrete mixing facilities are shown in Attachment RAI 3.1-1L.
- Harris Reservoir water level contour data between 220 ft. and 240 ft. are shown in Attachment RAI 3.1-1F.
- The footprint of the Cape Fear Makeup Water system is shown in Attachment RAI 3.1-1E and Attachment 3.1-1G.
- Permanent structures are shown in Attachment RAI 3.1-1A and Attachment RAI 3.1-1I.
- Permanent parking areas will be located in the disturbed areas shown in Attachment RAI 3.1-1A. At this time the location of the permanent parking areas has not been identified. The areas being considered include the laydown areas west of the proposed HAR units, the area between HAR 2 and HAR 3, and an area north of HAR 3. Permanent parking will not be located underneath transmission lines.
- The disturbed areas shown on Attachment 3.1-1A include the raw water pumphouse, which is the intake structure.
- HAR 3 230-kV switchyard and transmission lines connecting it to the existing transmission system are shown in Attachment RAI 3.1-1A and Attachment RAI 3.1-1L.
- Transmission lines connecting HNP-1/HAR 2 switchyard to existing transmission system are shown in Attachment RAI 3.1-1A.

- GIS data used to generate the Wetland Delineation Map shown in ER Chapter 2, Appendix 2.4-1, are provided in Attachment 3.1-1J.
- Areas surveyed for threatened and endangered (T&E) species are shown on Attachment 3.1-1H. Data used to create Attachment 3.1-1H include information from the North Carolina Natural Heritage Program and the State of North Carolina's listing of T&E species. Other areas on Attachment 3.1-1H include areas surveyed by Progress Energy.
- The transmission line ROW between switchyards and the first existing substation is shown in Attachment RAI 3.1-1M (new transmission lines) and Attachment RAI 3.1-1N (existing transmission lines).
- Tabular summaries that list features with the associated acreages that will be impacted and identified as to whether the impacts will represent a temporary or permanent loss of habitat are presented as RAI 3.1-1 Table 2, RAI 3.1-1 Table 3, and RAI 3.1-1 Table 4.

RAI 3.1-1 Table 1 summarizes the requested features and GIS layers corresponding to each figure, as well as a description of the figure. The actual GIS layers are provided on separate disc (Attachment 3.1-1J), and a list of the files contained on the disc is provided in Attachment 3.1-1K.

RAI 3.1-1 Table 1
Summary of Requested Features and Associated Shapefiles and Figures

Attachment #	Requested Features[b]	# of Layers[c]	GIS Layer Names[d]	Name and Description of Figure[e]
Attachment RAI 3.1-1A	HNP-1 (and HAR 2) 230-kV switchyard Disturbed area polygons for entire project HAR 3 230-kV switchyard and transmission lines connecting it to existing transmission system, including between HAR 3 and HNP-1/HAR 2 switchyard Transmission lines connecting HNP-1/ HAR 2 switchyard to existing transmission system Proposed new roads Permanent structures Permanent parking areas Units 2 and 3 intake structure	33	asphalt; blowdown_pipeline; blowdown_pump_house; blowdown_pumphouse; c_grad_2d; c_grad_dtch_pl; c_road_2d; c_road_cl; c_road_shdr; culvert; existing; level_1; level_10; level_12; level_14; level_2; level_33; level_61; level_7; level_8; level_9; main; new_grading; new_transmission_corridor; new_transmission_lines_extended; other_structures; power; raw_water_pipeline; rr; switchyard; tr_railroad; vasu_landfill; level_57	Plant Layout and Potentially Disturbed Area: This figure shows potentially disturbed areas on the plant layout of the HAR site.
Attachment RAI 3.1-1B	HNP-1 blowdown piping and discharge pipeline	10	blowdown_cl; blowdown_pipeline; blowdown_pumphouse; c_grad_2d; c_road_2d_pl; c_road_cl; existing_blowdown_abandoned; existing_blowdown_pipe; layer_0; raw_water_pipeline	HAR Blowdown Pipeline: This figure is an update of ER Figure 4.0-10, which shows the blowdown pipeline.
Attachment RAI 3.1-1C	Proposed new roads	13	c_conc_trch; c_grad_dtch; c_pipe_culv; c_road_2d; c_road_cl; c_road_shdr; dtm_breaklines; e_lite_pole; ex_contour_labels; ex_major_contours; ex_minor_contours; existing; proposed_road	Plant Road Access: This figure shows the new access roads proposed for HAR 2 and HAR 3.
Attachment RAI 3.1-1D	Proposed new roads Locations of proposed improvements to existing roads on site and immediate vicinity Modifications to roads and facilities related to raising Harris Reservoir	2	Infrastructure_line; Infrastucture_poly	Infrastructure Additions: This figure shows infrastructure additions to the HAR area.

RAI 3.1-1 Table 1
Summary of Requested Features and Associated Shapefiles and Figures

Attachment #	Requested Features[b]	# of Layers[c]	GIS Layer Names[d]	Name and Description of Figure[e]
Attachment RAI 3.1-1E	Footprint of Cape Fear makeup water system Disturbed areas for project	1	DelineatedAreas_PE	Potentially Disturbed Areas: This figure shows the locations of areas on the HAR site that would possibly be disturbed during and after construction.
Attachment RAI 3.1-1F	Harris Reservoir water level contour data between 220 ft. and 240 ft. NGVD29	1	HarrisLake_5ft_Contours	Five Foot Elevation Contours: This figure delineates the contour lines for the Harris Reservoir expansion from 220 ft. through 240 ft. elevation.
Attachment RAI 3.1-1G	Footprint of Cape Fear makeup water system	2	makeup_pumphouse_update; makeup_water_pipeline_update	Makeup Water Pipeline System: This is a revision of ER Figure 2.0-4, showing the location of the makeup water pipeline system for HAR 2 and HAR 3.
Attachment RAI 3.1-1H	Areas surveyed for threatened and endangered species	4	snha; nheo; InformallySurveyedAreas_lines; InformallySurveyedAreas_polygons	Significant Natural Areas and Areas Surveyed for Threatened and Endangered Species: This figure is a revision of ER Figure 2.4-4, showing the significant natural areas and threatened and endangered species based on information from the North Carolina Natural Heritage Program. Also includes areas surveyed by Progress Energy.
Attachment RAI 3.1-1I	Proposed new roads Modifications to roads and facilities related to raising Harris Reservoir Permanent Structures	4	Dam; Main; Road; Trench	Emergency Spillway: This figure shows the location of the proposed emergency spillway and the area that will be disturbed.
Attachment RAI 3.1-1J	GIS data files on disc	76	Includes all GIS Layer files identified in RAI 3.1-1 Table 1.	A disc containing all of the GIS layer files identified in RAI 3.1-1 Table 1.
Attachment RAI 3.1-1K	List of files provided in Attachment RAI 3.1-1J	N/A	N/A	A list of all the files provided in Attachment RAI 3.1-1J.
Attachment RAI 3.1-1L	Existing dredged material and other spoils storage areas Laydown area(s), assembly area(s), construction parking area(s) and spoils stockpile or disposal areas Concrete mixing facilities Disturbed areas for project HAR 3 230-kV switchyard and transmission lines	N/A	N/A	Temporary Construction Facilities Area Layout: The areas shown on this figure were used to create the shapefiles of the temporary construction and permanent facilities shown on Attachment 3.1-1E.

RAI 3.1-1 Table 1
Summary of Requested Features and Associated Shapefiles and Figures

Attachment #	Requested Features[b]	# of Layers[c]	GIS Layer Names[d]	Name and Description of Figure[e]
Attachment RAI 3.1-1M	Proposed transmission line ROW between switchyard and substation	4	transmission_lines; new_transmission_lines_extended; substations; new_transmission_corridor	New HAR 3 Transmission Lines: This figure shows the ROW for HAR 3 to the substations.
Attachment RAI 3.1-1N	Existing line ROW between switchyard and substation	4	transmission_lines; new_transmission_lines_extended; substations; new_transmission_corridor	Existing Transmission Lines: This figure shows the ROW for existing transmission lines to substations.
ER Appendix 2.4-1[a]	Wetland delineation	1	PE_HAR_Wetlands	This existing figure shows the wetlands that will be disturbed by construction and operation of HAR 2 and HAR 3.

a ER Appendix 2.4-1 is not attached to this response but is available in the existing ER.
b Requested features refers to the features requested in the RAI text that are present on the figure. These features are included in each listing separately.
c Number of layers refers to the number of layers associated with each figure.
d GIS layer names are the filenames of the layers in each figure that are provided in Attachment RAI 3.1-1J. Layers do not necessarily work independently.
e Name and description of figure refers to the name on the title block of the figure and a brief description of associated figure.

The summary of acreage by land use type associated with the disturbed areas is provided in RAI 3.1-1 Table 2.

RAI 3.1-1 Table 2
Summary of Disturbed Area by Land Use Type

Description	Area (sq. ft.)	Acres
Bottomland Forest/Hardwood Swamps	7,216,502	165.67
Deciduous Shrubland	683	0.02
Evergreen Shrubland	915,473	21.02
High Intensity Developed	1,916,618	44.00
Low Intensity Developed	412,362	9.47
Managed Herbaceous Cover	5,064,525	116.27
Mixed Hardwoods/Conifers	2,796,629	64.20
Mixed Shrubland	183,602	4.21
Mixed Upland Hardwoods	142,174	3.26
Southern Yellow Pine	16,059,097	368.67
Unconsolidated Sediment	1,803	0.04
Unmanaged Herbaceous Upland	90,137	2.07
Water Bodies	6,987,960	160.42

RAI 3.1-1 Table 3 summarizes the disturbed area by construction facility. RAI 3.1-1 Table 4 summarizes the disturbed land use type by specific facility.

RAI 3.1-1 Table 3
Summary of Disturbed Area by Construction Facility

Description	Area (sq. ft.)	Acres
Laydown Area	2,212,848	50.80
Construction Parking	1,372,140	24.80
Construction Office and Warehouses	666,468	15.80
Batch Plant	522,726	12.00
Spoils Area	505,301	11.60

RAI 3.1-1 Table 4
Summary of Disturbed Area by Land Use Type and Facility

Notes: Permanent Facilities represent permanent loss of habitat
Temporary Facilities represent temporary loss of habitat

Description	Acres
Emergency Spillway Permanent Facilities	
Bottomland Forest/Hardwood Swamps	13.44
High Intensity Developed	2.30
Mixed Hardwoods/Conifers	0.93
Southern Yellow Pine	4.85
Water Bodies	0.31
Makeup Water Pipeline Permanent Facilities	
Bottomland Forest/Hardwood Swamps	55.22
Evergreen Shrubland	1.78
Managed Herbaceous Cover	3.72
Mixed Hardwoods/Conifers	40.49
Southern Yellow Pine	78.99
Water Bodies	0.90
Blowdown Pipeline Permanent Facilities	
Bottomland Forest/Hardwood Swamps	2.48
Evergreen Shrubland	3.89
Low Intensity Developed	3.47
Managed Herbaceous Cover	11.41
Southern Yellow Pine	24.94
Unmanaged Herbaceous Upland	2.07
Water Bodies	139.78

RAI 3.1-1 Table 4 (cont.)
Summary of Disturbed Area by Land Use Type and Facility

Notes: Permanent Facilities represent permanent loss of habitat
Temporary Facilities represent temporary loss of habitat

Description	Acres
Plant Layout Permanent Facilities	
Bottomland Forest/Hardwood Swamps	39.86
Evergreen Shrubland	11.92
High Intensity Developed	30.20
Low Intensity Developed	5.96
Managed Herbaceous Cover	68.49
Mixed Hardwoods/Conifers	10.15
Southern Yellow Pine	134.42
Unconsolidated Sediment	0.04
Water Bodies	12.43
Plant Layout Temporary Facilities	
Bottomland Forest/Hardwood Swamps	22.35
High Intensity Developed	3.19
Managed Herbaceous Cover	20.35
Mixed Hardwoods/Conifer	6.05
Mixed Shrubland	4.21
Southern Yellow Pine	58.12
Water Bodies	0.73
Infrastructure Permanent Facilities	
Bottomland Forest/Hardwood Swamps	32.32
Deciduous Shrubland	0.02
Evergreen Shrubland	3.42
High Intensity Developed	8.31
Low Intensity Developed	0.05
Managed Herbaceous Cover	12.29
Mixed Hardwoods/Conifer	6.57
Mixed Shrubland	3.26
Southern Yellow Pine	66.28
Water Bodies	6.29

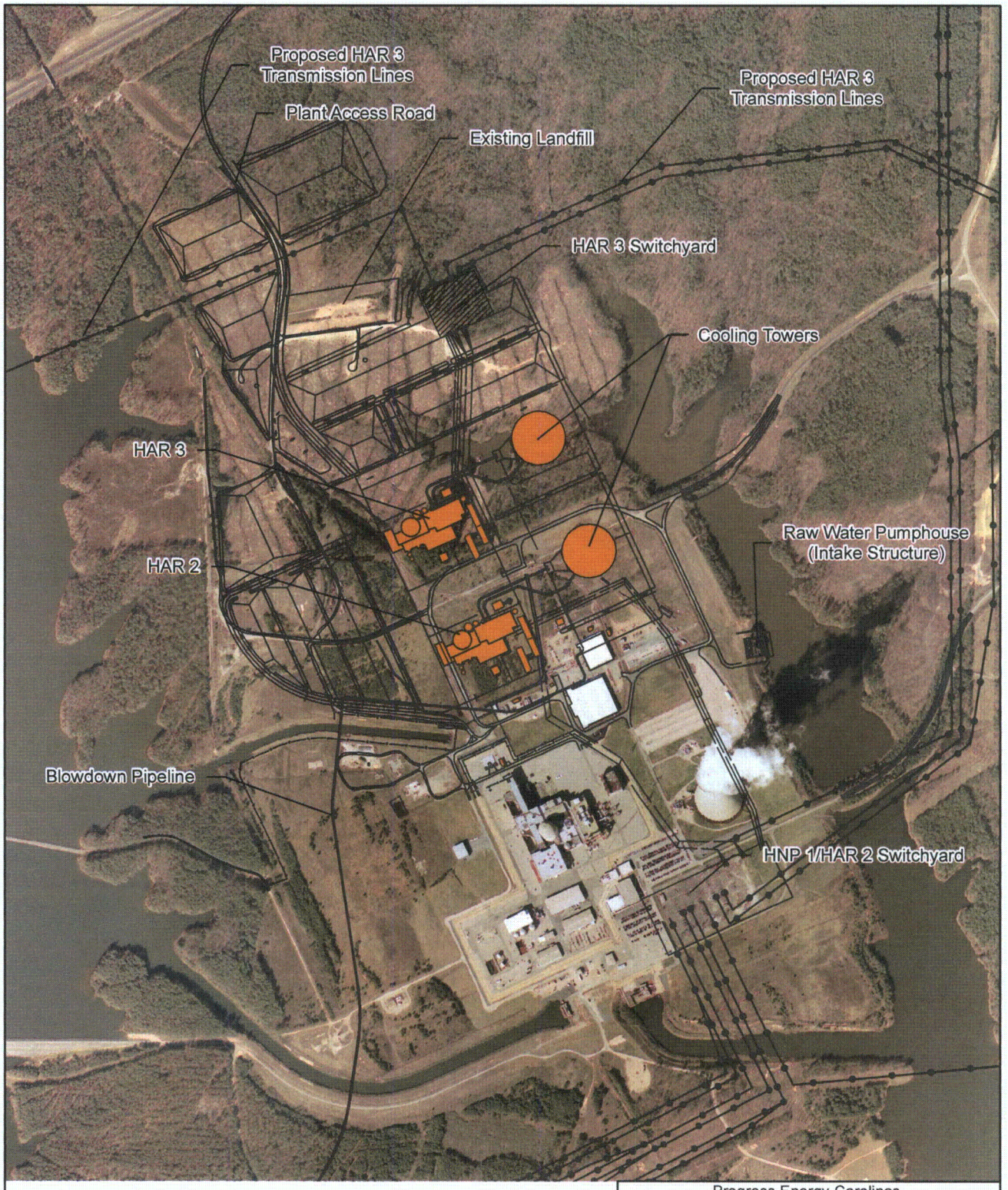
Associated HAR COL Application Revisions:

The following figures shall be revised in the next ER revision:

- ER Figure 4.0-10, HAR Blowdown Pipeline (Attachment 3.1-1B)
- ER Figure 2.0-4, Makeup Water Pipeline System (Attachment 3.1-1G)
- ER Figure 2.4-4, Significant Natural Areas (Attachment 3.1-1H)

Attachments/Enclosures:

Attachment RAI 3.1-1A	Plant Layout and Potentially Disturbed Area
Attachment RAI 3.1-1B	HAR Blowdown Pipeline
Attachment RAI 3.1-1C	Plant Road Access
Attachment RAI 3.1-1D	Infrastructure Additions
Attachment RAI 3.1-1E	Potentially Disturbed Areas
Attachment RAI 3.1-1F	Five Foot Elevation Contours
Attachment RAI 3.1-1G	Makeup Water Pipeline System
Attachment RAI 3.1-1H	Significant Natural Areas
Attachment RAI 3.1-1I	Emergency Spillway
Attachment RAI 3.1-1J	Disc of GIS shapefiles
Attachment RAI 3.1-1K	List of files on disc
Attachment RAI 3.1-1L	Temporary Construction Facilities Layout
Attachment RAI 3.1-1M	New HAR 3 Transmission Lines
Attachment RAI3.1-1N	Existing Transmission Lines



LEGEND

Potentially Disturbed Area

HAR 2 and HAR 3 Structure

N
W E
S

0 500
Meters

0 1,000 2,000
Feet

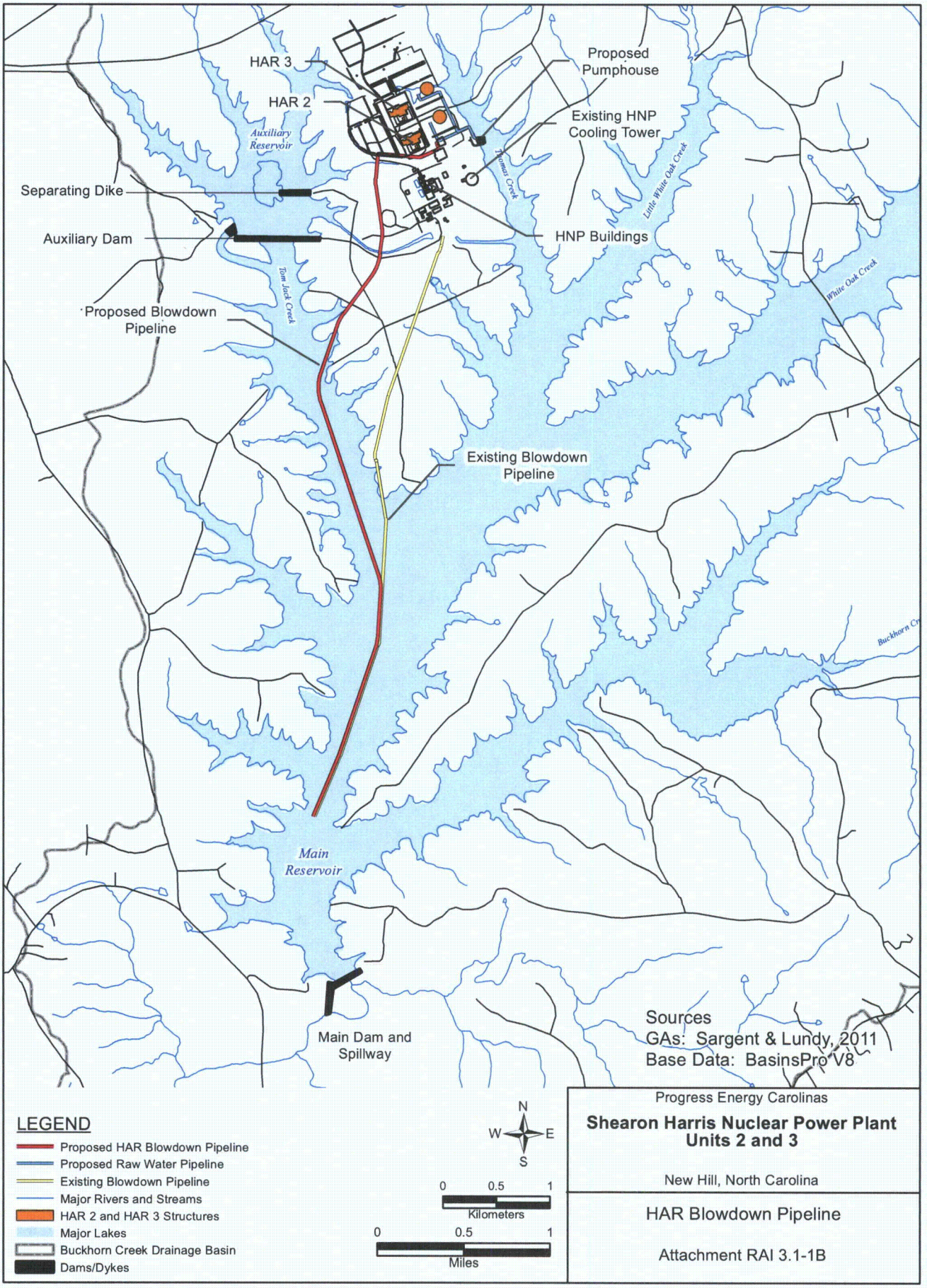
Source
Data provided by Sargent & Lundy, 2011

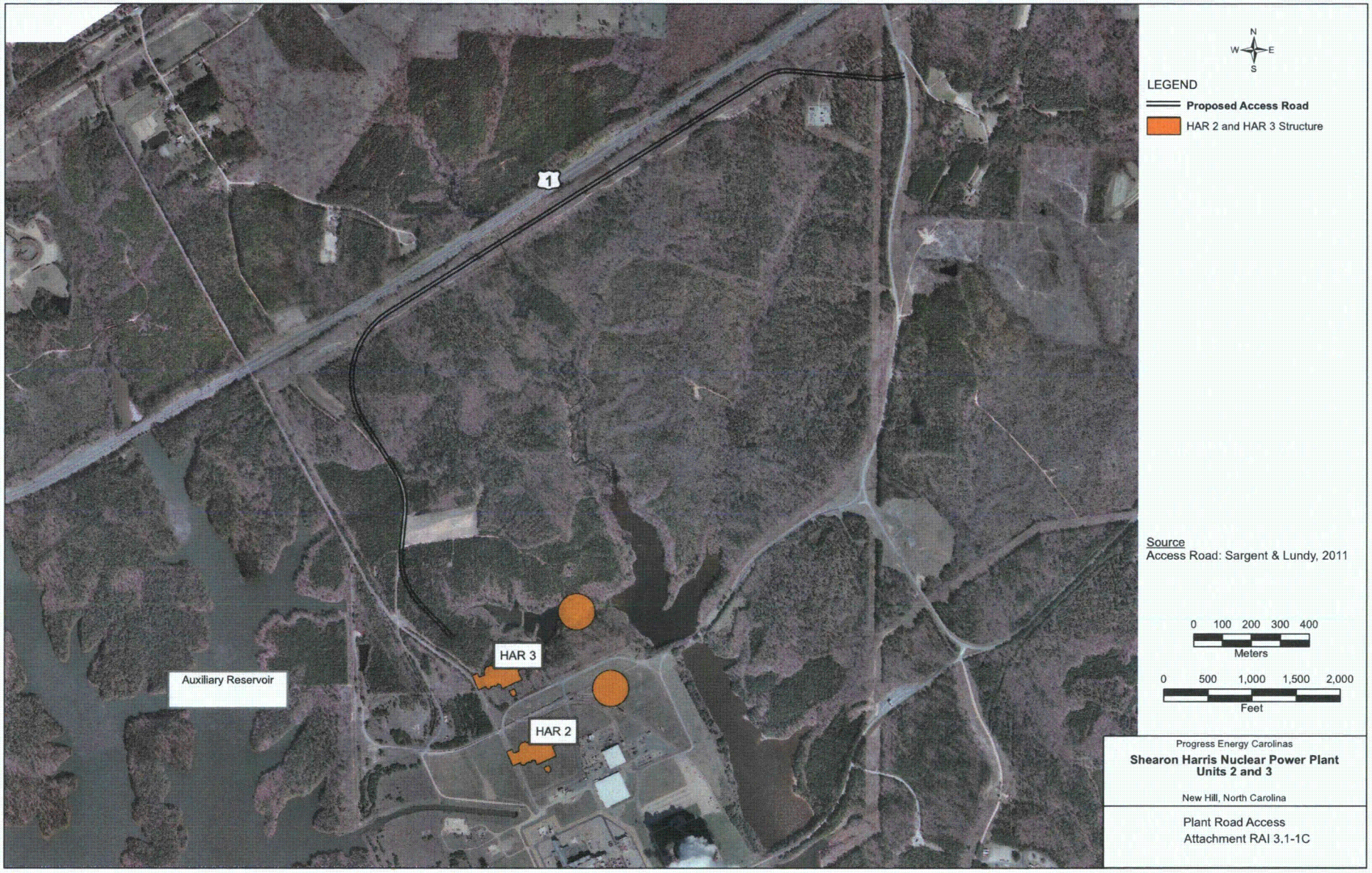
Progress Energy Carolinas

Shearon Harris Nuclear Power Plant Units 2 and 3

New Hill, North Carolina

Plant Layout and
Potentially Disturbed Area
Attachment RAI 3.1-1A


HAR 3
HAR 2
Auxiliary Reservoir
Proposed Pumphouse
Existing HNP Cooling Tower
Thomas Creek
Little White Oak Creek
Separating Dike
Auxiliary Dam
HNP Buildings
Tom Jack Creek
White Oak Creek
Proposed Blowdown Pipeline
Existing Blowdown Pipeline
Buckhorn Cr
Main Reservoir
Main Dam and Spillway
Sources
GAs: Sargent & Lundy, 2011
Base Data: BasinsPro V8
LEGEND
Proposed HAR Blowdown Pipeline
Proposed Raw Water Pipeline
Existing Blowdown Pipeline
Major Rivers and Streams
HAR 2 and HAR 3 Structures
Major Lakes
Buckhorn Creek Drainage Basin
Dams/Dykes
N
W
E
S
0 0.5 1
Kilometers
0 0.5 1
Miles
Progress Energy Carolinas
Shearon Harris Nuclear Power Plant Units 2 and 3
New Hill, North Carolina
HAR Blowdown Pipeline
Attachment RAI 3.1-1B


N
W
E
S
LEGEND
Proposed Access Road
HAR 2 and HAR 3 Structure
1
HAR 3
HAR 2
Auxiliary Reservoir
Source
Access Road: Sargent & Lundy, 2011
0 100 200 300 400
Meters
0 500 1,000 1,500 2,000
Feet
Progress Energy Carolinas
Shearon Harris Nuclear Power Plant
Units 2 and 3
New Hill, North Carolina
Plant Road Access
Attachment RAI 3.1-1C

LEGEND

- Infrastructure Additions
- 240' Contour
- Roads
- Major Lakes

N
W E
S

0 1
Kilometers

0 1
Miles

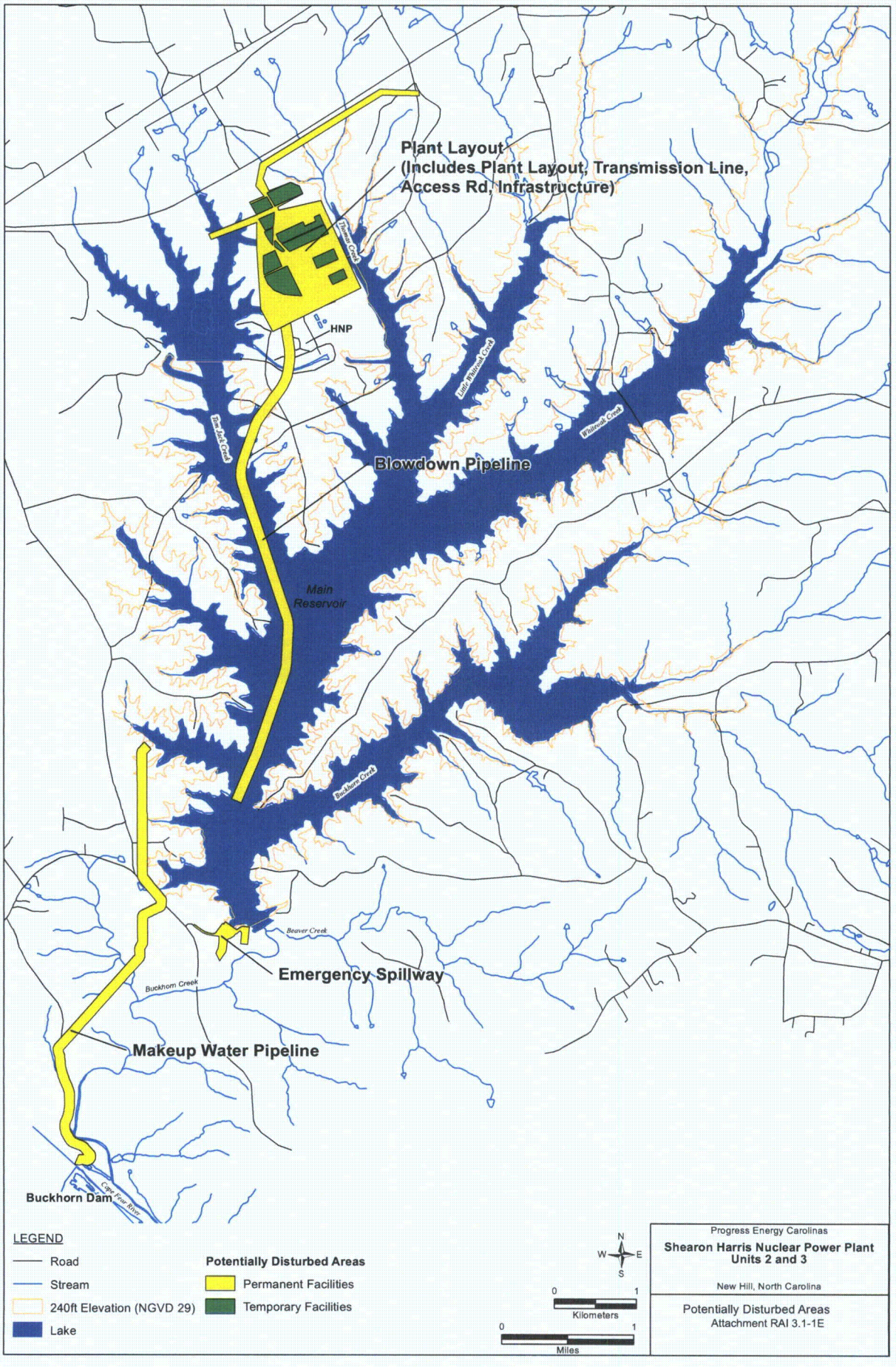
Progress Energy Carolinas

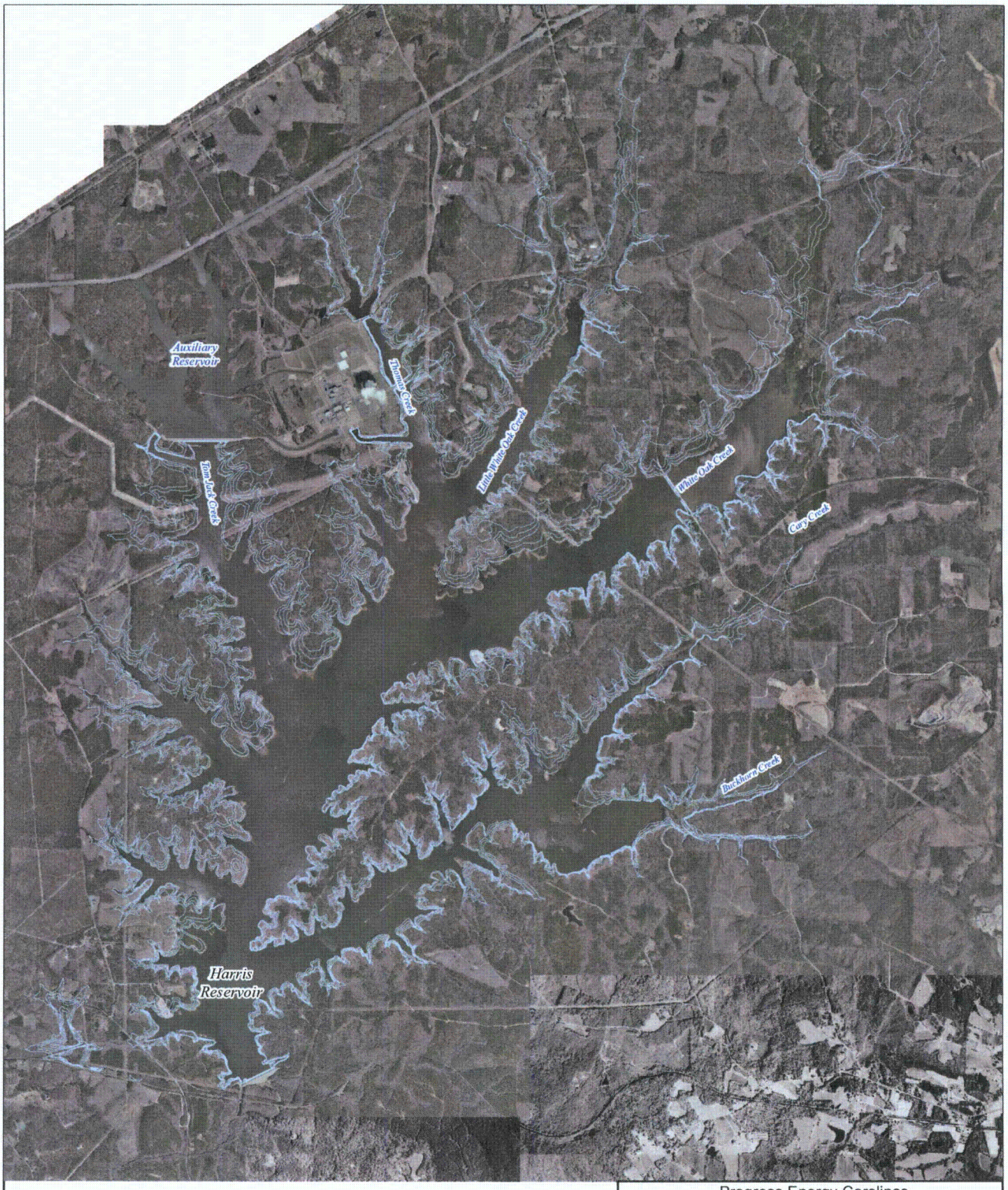
Shearon Harris Nuclear Power Plant Units 2 and 3

New Hill, North Carolina

Infrastructure Additions

ATTACHMENT RAI 3.1-1D


Plant Layout
(Includes Plant Layout, Transmission Line,
Access Rd, Infrastructure)
HNP
Thomas Creek
Little Whitehall Creek
Whitehall Creek
Bad Luck Creek
Blowdown Pipeline
Main
Reservoir
Beckhorn Creek
Beaver Creek
Emergency Spillway
Buckhorn Creek
Makeup Water Pipeline
Buckhorn Dam
Cape Fear River
LEGEND
Road
Stream
240ft Elevation (NGVD 29)
Lake
Potentially Disturbed Areas
Permanent Facilities
Temporary Facilities
N
W
E
S
0
1
Kilometers
0
1
Miles
Progress Energy Carolinas
Shearon Harris Nuclear Power Plant
Units 2 and 3
New Hill, North Carolina
Potentially Disturbed Areas
Attachment RAI 3.1-1E



LEGEND

5 Foot Elevation Contour (220' through 240')

N
W E
S

0 1
Kilometers

0 1
Miles

Progress Energy Carolinas

Shearon Harris Nuclear Power Plant Units 2 and 3

New Hill, North Carolina

Five Foot Elevation Contours
Attachment RAI 3.1-1F

LEGEND

- Makeup Water Route
- 240 Foot Elevation Contour (NGVD29)
- Major Rivers and Streams
- Major Lakes
- Buckhorn Creek Drainage Basin
- Dams/Dikes

N
W E
S

0 1
Kilometers

0 1
Miles

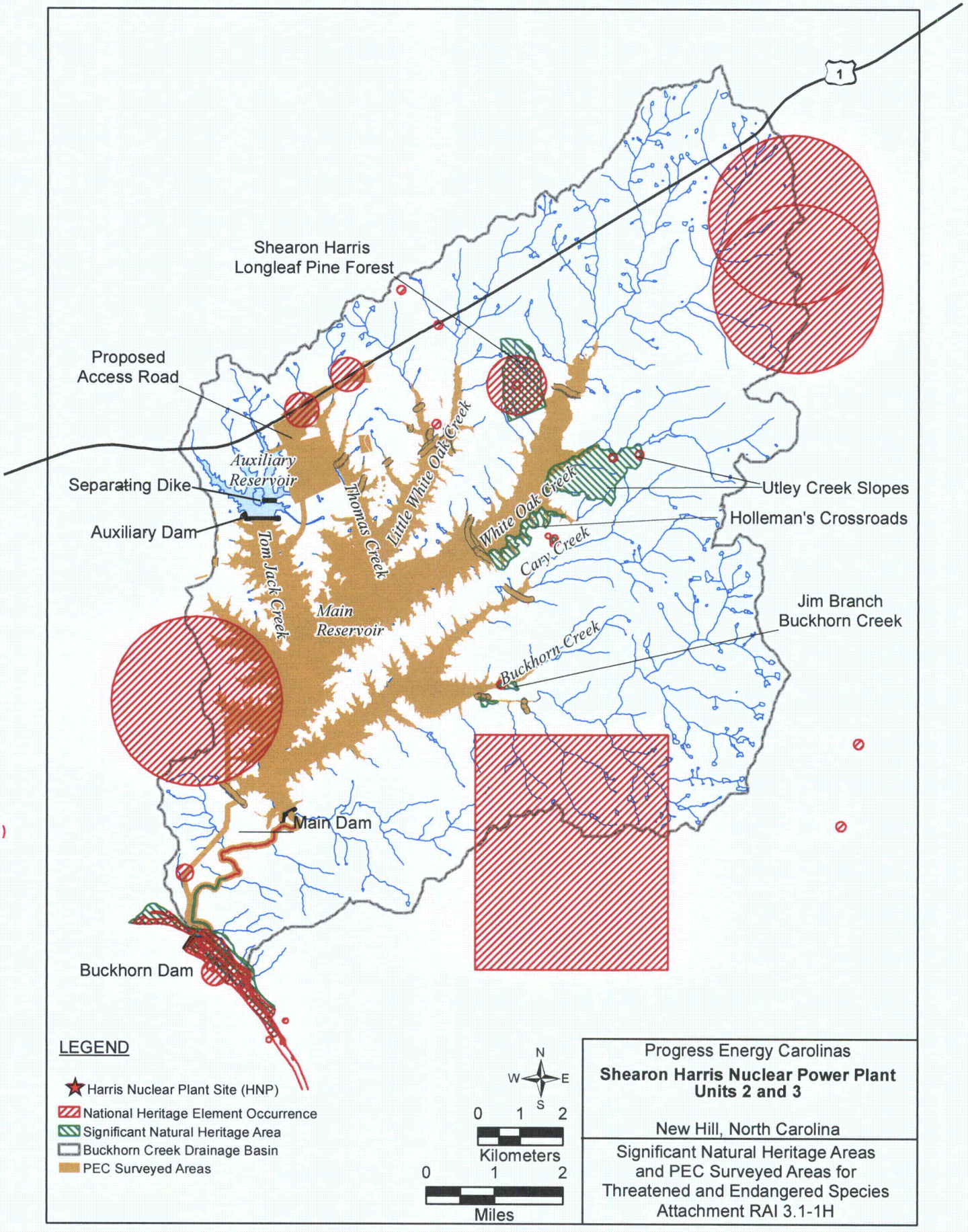
Progress Energy Carolinas

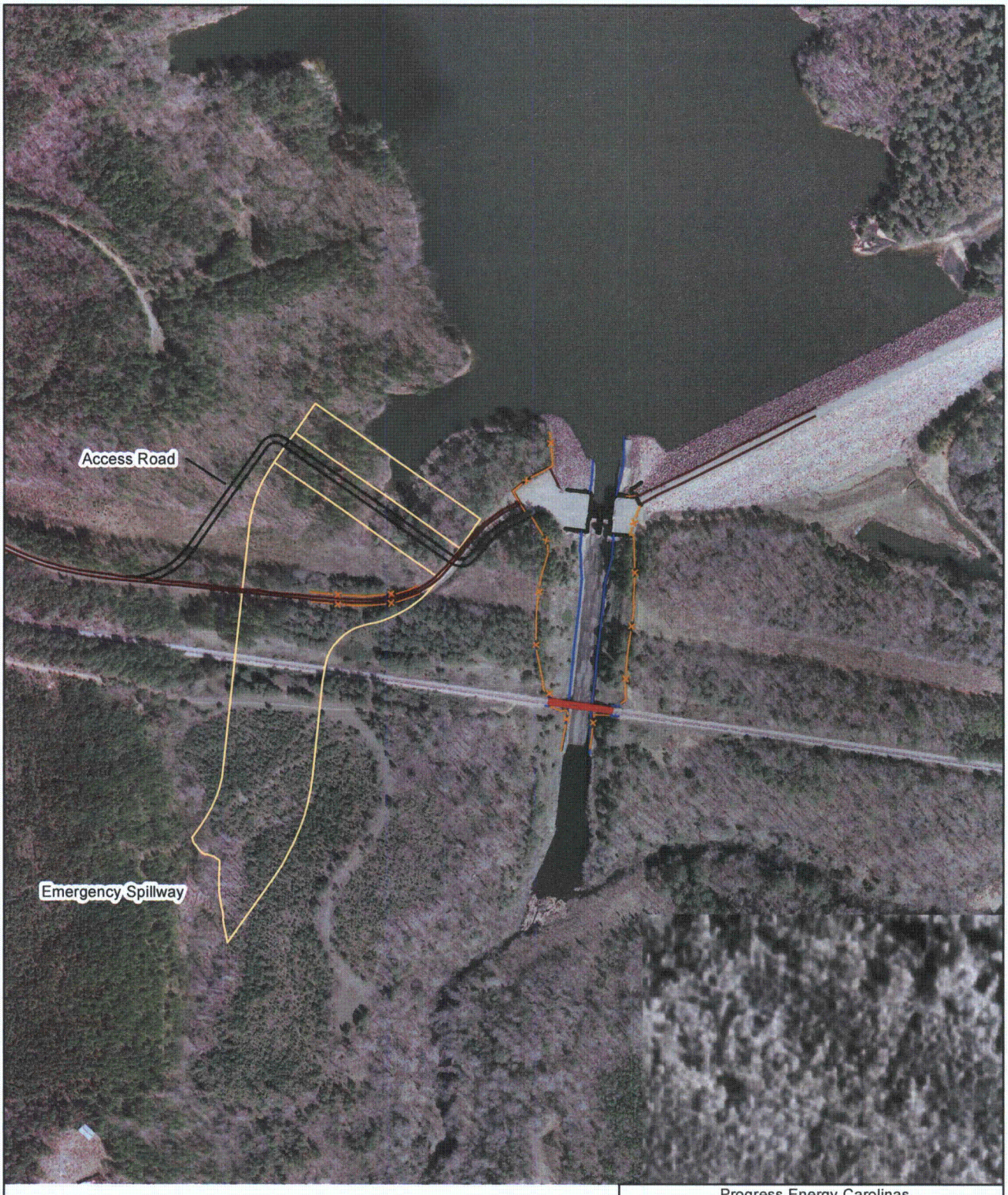
Shearon Harris Nuclear Power Plant Units 2 and 3

New Hill, North Carolina

Makeup Water Pipeline System

Attachment RAI 3.1-1G


1
Shearon Harris
Longleaf Pine Forest
Proposed
Access Road
Auxiliary
Reservoir
Separating Dike
Auxiliary Dam
Tom Jack Creek
Thomas Creek
Little White Oak Creek
White Oak Creek
Cary Creek
Main
Reservoir
Utley Creek Slopes
Holleman's Crossroads
Jim Branch
Buckhorn Creek
Buckhorn Creek
Main Dam
Buckhorn Dam
LEGEND
Harris Nuclear Plant Site (HNP)
National Heritage Element Occurrence
Significant Natural Heritage Area
Buckhorn Creek Drainage Basin
PEC Surveyed Areas
N
W
E
S
0 1 2
Kilometers
0 1 2
Miles
Progress Energy Carolinas
Shearon Harris Nuclear Power Plant
Units 2 and 3
New Hill, North Carolina
Significant Natural Heritage Areas
and PEC Surveyed Areas for
Threatened and Endangered Species
Attachment RAI 3.1-1H



LEGEND

- Emergency Spillway
- Concrete Dam
- Main Spillway
- Asphalt Edge
- Fence
- Bridge

N
W E
S

0 100
Meters

0 500
Feet

Progress Energy Carolinas

Shearon Harris Nuclear Power Plant Units 2 and 3

New Hill, North Carolina

Emergency Spillway

ATTACHMENT RAI 3.1-1I

AccessRoad:

c_conc_trch.dbf
c_conc_trch.prj
c_conc_trch.sbn
c_conc_trch.sbx
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c_pipe_culv.shx
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c_road_2d.sbx
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c_road_shdr.sbx
c_road_shdr.shp
c_road_shdr.shp.xml

c_road_shdr.shx
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dtm_breaklines.shx
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ex_minor_contours.sbn
ex_minor_contours.sbx
ex_minor_contours.shp
ex_minor_contours.shp.xml
ex_minor_contours.shx
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existing.prj
existing.sbn
existing.sbx
existing.shp
existing.shp.xml
existing.shx

proposed_road.dbf
proposed_road.prj
proposed_road.sbn
proposed_road.sbx
proposed_road.shp
proposed_road.shp.xml
proposed_road.shx

BlowdownPipeline:

blowdown_cl.dbf
blowdown_cl.prj
blowdown_cl.sbn
blowdown_cl.sbx
blowdown_cl.shp
blowdown_cl.shp.xml
blowdown_cl.shx
blowdown_pipeline.dbf
blowdown_pipeline.prj
blowdown_pipeline.sbn
blowdown_pipeline.sbx
blowdown_pipeline.shp
blowdown_pipeline.shp.xml
blowdown_pipeline.shx
blowdown_pumphouse.dbf
blowdown_pumphouse.prj
blowdown_pumphouse.sbn
blowdown_pumphouse.sbx
blowdown_pumphouse.shp
blowdown_pumphouse.shp.xml
blowdown_pumphouse.shx
c_grad_2d.dbf
c_grad_2d.prj
c_grad_2d.sbn
c_grad_2d.sbx
c_grad_2d.shp
c_grad_2d.shp.xml
c_grad_2d.shx
c_road_2d.dbf
c_road_2d.prj
c_road_2d.sbn
c_road_2d.sbx
c_road_2d.shp
c_road_2d.shp.xml

c_road_2d.shx
c_road_cl.dbf
c_road_cl.prj
c_road_cl.sbn
c_road_cl.sbx
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c_road_cl.shx
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existing_blowdown_abandoned.shp.xml
existing_blowdown_abandoned.shx
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existing_blowdown_pipe.prj
existing_blowdown_pipe.sbn
existing_blowdown_pipe.sbx
existing_blowdown_pipe.shp
existing_blowdown_pipe.shp.xml
existing_blowdown_pipe.shx
layer_0.dbf
layer_0.prj
layer_0.sbn
layer_0.sbx
layer_0.shp
layer_0.shp.xml
layer_0.shx
raw_water_pipeline.dbf
raw_water_pipeline.prj
raw_water_pipeline.sbn
raw_water_pipeline.sbx
raw_water_pipeline.shp
raw_water_pipeline.shp.xml
raw_water_pipeline.shx

DelineatedArea_PE:

DelineatedAreas_PE.dbf
DelineatedAreas_PE.prj
DelineatedAreas_PE.sbn
DelineatedAreas_PE.sbx
DelineatedAreas_PE.shp

DelineatedAreas_PE.shp.xml
DelineatedAreas_PE.shx

Emergency_Spillway:

Dam.dbf
Dam.prj
Dam.sbn
Dam.sbx
Dam.shp
Dam.shp.xml
Dam.shx
Main.dbf
Main.prj
Main.sbn
Main.sbx
Main.shp
Main.shp.xml
Main.shx
Road.dbf
Road.prj
Road.sbn
Road.sbx
Road.shp
Road.shp.xml
Road.shx
Trench.dbf
Trench.prj
Trench.sbn
Trench.sbx
Trench.shp
Trench.shp.xml
Trench.shx

Existing Transmission Lines:

new_transmission_corridor.dbf
new_transmission_corridor.prj
new_transmission_corridor.sbn
new_transmission_corridor.sbx
new_transmission_corridor.shp
new_transmission_corridor.shp.xml
new_transmission_corridor.shx
new_transmission_lines_extended.dbf
new_transmission_lines_extended.prj

new_transmission_lines_extended.sbn
new_transmission_lines_extended.sbx
new_transmission_lines_extended.shp
new_transmission_lines_extended.shp.xml
new_transmission_lines_extended.shx
substations.dbf
substations.prj
substations.sbn
substations.sbx
substations.shp
substations.shp.xml
substations.shx
transmission_lines.dbf
transmission_lines.prj
transmission_lines.sbn
transmission_lines.sbx
transmission_lines.shp
transmission_lines.shp.xml
transmission_lines.shx

HarrisLake_5ft_Contours:

HarrisLake_5ft_Contours.dbf
HarrisLake_5ft_Contours.prj
HarrisLake_5ft_Contours.sbn
HarrisLake_5ft_Contours.sbx
HarrisLake_5ft_Contours.shp
HarrisLake_5ft_Contours.shp.xml
HarrisLake_5ft_Contours.shx

Infrastructure:

Infrastructure_line.dbf
Infrastructure_line.prj
Infrastructure_line.sbn
Infrastructure_line.sbx
Infrastructure_line.shp
Infrastructure_line.shp.xml
Infrastructure_line.shx
Infrastructure_poly.dbf
Infrastructure_poly.prj
Infrastructure_poly.sbn
Infrastructure_poly.sbx
Infrastructure_poly.shp
Infrastructure_poly.shp.xml

Infrastructure_poly.shx

Makeup_water

makeup_pumphouse_update.dbf
makeup_pumphouse_update.prj
makeup_pumphouse_update.sbn
makeup_pumphouse_update.sbx
makeup_pumphouse_update.shp
makeup_pumphouse_update.shp.xml
makeup_pumphouse_update.shx
makeup_water_pipeline_update.dbf
makeup_water_pipeline_update.prj
makeup_water_pipeline_update.sbn
makeup_water_pipeline_update.sbx
makeup_water_pipeline_update.shp
makeup_water_pipeline_update.shp.xml
makeup_water_pipeline_update.shx

Natural_Heritage:

InformallySurveyedAreas_lines.dbf
InformallySurveyedAreas_lines.prj
InformallySurveyedAreas_lines.sbn
InformallySurveyedAreas_lines.sbx
InformallySurveyedAreas_lines.shp
InformallySurveyedAreas_lines.shp.xml
InformallySurveyedAreas_lines.shx
InformallySurveyedAreas_polygons.dbf
InformallySurveyedAreas_polygons.prj
InformallySurveyedAreas_polygons.sbn
InformallySurveyedAreas_polygons.sbx
InformallySurveyedAreas_polygons.shp
InformallySurveyedAreas_polygons.shp.xml
InformallySurveyedAreas_polygons.shx
nheo.txt
nheo_buckhorn.dbf
nheo_buckhorn.prj
nheo_buckhorn.sbn
nheo_buckhorn.sbx
nheo_buckhorn.shp
nheo_buckhorn.shx
snha.txt
snha_buckhorn.dbf
snha_buckhorn.prj

snha_buckhorn.sbn
snha_buckhorn.sbx
snha_buckhorn.shp
snha_buckhorn.shx

New HAR 3 Transmission Lines:

new_transmission_corridor.dbf
new_transmission_corridor.prj
new_transmission_corridor.sbn
new_transmission_corridor.sbx
new_transmission_corridor.shp
new_transmission_corridor.shp.xml
new_transmission_corridor.shx
new_transmission_lines_extended.dbf
new_transmission_lines_extended.prj
new_transmission_lines_extended.sbn
new_transmission_lines_extended.sbx
new_transmission_lines_extended.shp
new_transmission_lines_extended.shp.xml
new_transmission_lines_extended.shx
substations.dbf
substations.prj
substations.sbn
substations.sbx
substations.shp
substations.shp.xml
substations.shx
transmission_lines.dbf
transmission_lines.prj
transmission_lines.sbn
transmission_lines.sbx
transmission_lines.shp
transmission_lines.shp.xml
transmission_lines.shx

PE_HAR_Wetlands:

PE_HAR_Wetlands.dbf
PE_HAR_Wetlands.prj
PE_HAR_Wetlands.sbn
PE_HAR_Wetlands.sbx
PE_HAR_Wetlands.shp
PE_HAR_Wetlands.shp.xml
PE_HAR_Wetlands.shx

Plant_Layout:

asphalt.dbf
asphalt.prj
asphalt.sbn
asphalt.sbx
asphalt.shp
asphalt.shp.xml
asphalt.shx
blowdown_pipeline.dbf
blowdown_pipeline.prj
blowdown_pipeline.sbn
blowdown_pipeline.sbx
blowdown_pipeline.shp
blowdown_pipeline.shp.xml
blowdown_pipeline.shx
blowdown_pump_house.dbf
blowdown_pump_house.prj
blowdown_pump_house.sbn
blowdown_pump_house.sbx
blowdown_pump_house.shp
blowdown_pump_house.shp.xml
blowdown_pump_house.shx
blowdown_pumphouse.dbf
blowdown_pumphouse.prj
blowdown_pumphouse.sbn
blowdown_pumphouse.sbx
blowdown_pumphouse.shp
blowdown_pumphouse.shp.xml
blowdown_pumphouse.shx
c_grad_2d.dbf
c_grad_2d.prj
c_grad_2d.sbn
c_grad_2d.sbx
c_grad_2d.shp
c_grad_2d.shp.xml
c_grad_2d.shx
c_grad_dtch.dbf
c_grad_dtch.prj
c_grad_dtch.sbn
c_grad_dtch.sbx
c_grad_dtch.shp
c_grad_dtch.shp.xml
c_grad_dtch.shx

c_road_2d.dbf
c_road_2d.prj
c_road_2d.sbn
c_road_2d.sbx
c_road_2d.shp
c_road_2d.shp.xml
c_road_2d.shx
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c_road_cl.prj
c_road_cl.sbn
c_road_cl.sbx
c_road_cl.shp
c_road_cl.shp.xml
c_road_cl.shx
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c_road_shdr.prj
c_road_shdr.sbn
c_road_shdr.sbx
c_road_shdr.shp
c_road_shdr.shp.xml
c_road_shdr.shx
culvert.dbf
culvert.prj
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culvert.shp
culvert.shp.xml
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existing.shp.xml
existing.shx
level_1.dbf
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level_1.sbn
level_1.sbx
level_1.shp
level_1.shp.xml
level_1.shx
level_10.dbf

level_10.prj
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level_10.shx
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level_7.prj

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main.sbn
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main.shx
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power.sbn
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power.shx
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rr.shx
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switchyard.prj
switchyard.sbn
switchyard.sbx

switchyard.shp
switchyard.shp.xml
switchyard.shx
tr_railroad.dbf
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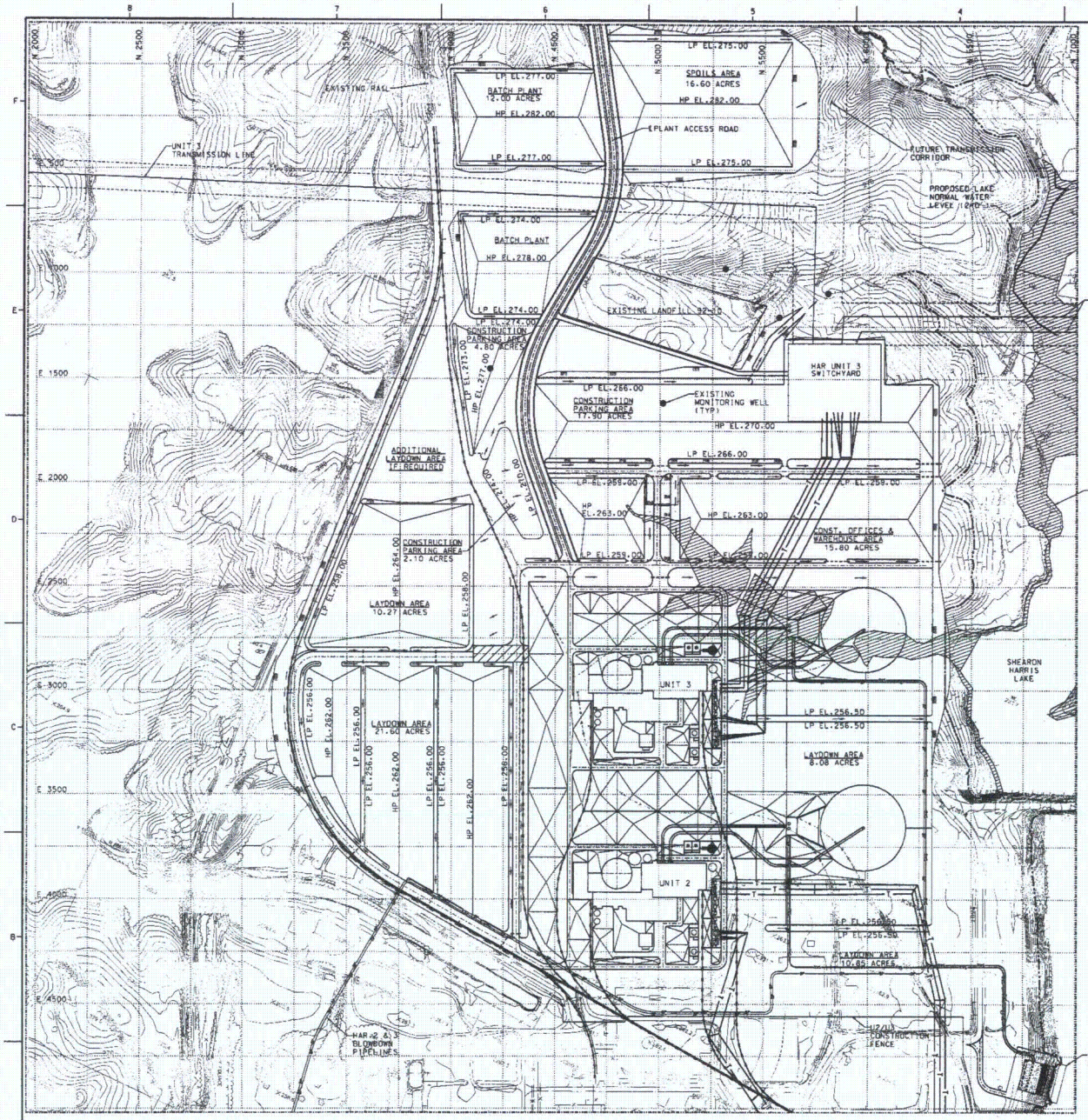
Attachment RAI 3.1-1L



DESCRIPTION	CONSTRUCTION FACILITIES AREA PROVIDED			
	LEVY		HARRIS	
	(SQ. FT.)	(ACRES)	(SQ. FT.)	(ACRES)
LAYDOWN AREA	2,210,000	50.73	2,212,848	50.80
CONSTRUCTION PARKING	1,152,000	26.45	1,372,140	24.80
CONSTRUCTION OFFICES AND WAREHOUSE	670,230	15.39	666,468	15.80
BATCH PLANT	562,500	12.91	522,726	12.00
SPOILS AREA	739,600	16.98	505,301	11.60
SUBTOTAL	—	122.46	—	115.00

FOR INFORMATION ONLY

NOTES

REFERENCE DRAWINGS

UNDERGROUND OR EMBEDDED UTILITIES MAY BE LOCATED WITHIN OR ADJACENT TO THE AREA IN WHICH EXCAVATION, DEMOLITION, FOUNDATION, OR MODIFICATION WORK IS TO BE PERFORMED.

REFERENCES RELATING TO THE UNDERGROUND OR EMBEDDED UTILITIES ARE PROVIDED TO ASSIST THE CONTRACTOR/INSTALLER IN THE FIELD LOCATING THOSE UTILITIES AND OTHER POSSIBLE UNDERGROUND OR EMBEDDED INTERFERENCES WITH THE WORK.

THE CONTRACTOR/INSTALLER SHALL EXERCISE DUE CAUTION DURING ALL EXCAVATION/FOUNDATION/DEMOLITION WORK.

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTORS(S)) PERFORMING THE WORK.

NOT FOR CONSTRUCTION

NOT NUCLEAR SAFETY RELATED

FILENAME:HAG-80-X2-001.DGN

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
0	08/08/2011	AGP	GK/DJP	AKS	FOR OWNER'S ACCEPTANCE	
1	09/13/2011	AGP	DJP	AKS	REVISED TO SHOW DEDICATED TRANSMISSION LINE CORRIDORS; ISSUED FOR OWNER'S ACCEPTANCE	

SCALE: 1"=200'

PROJECT NUMBER: 11940-109

TEMPORARY CONSTRUCTION FACILITIES AREA LAYOUT

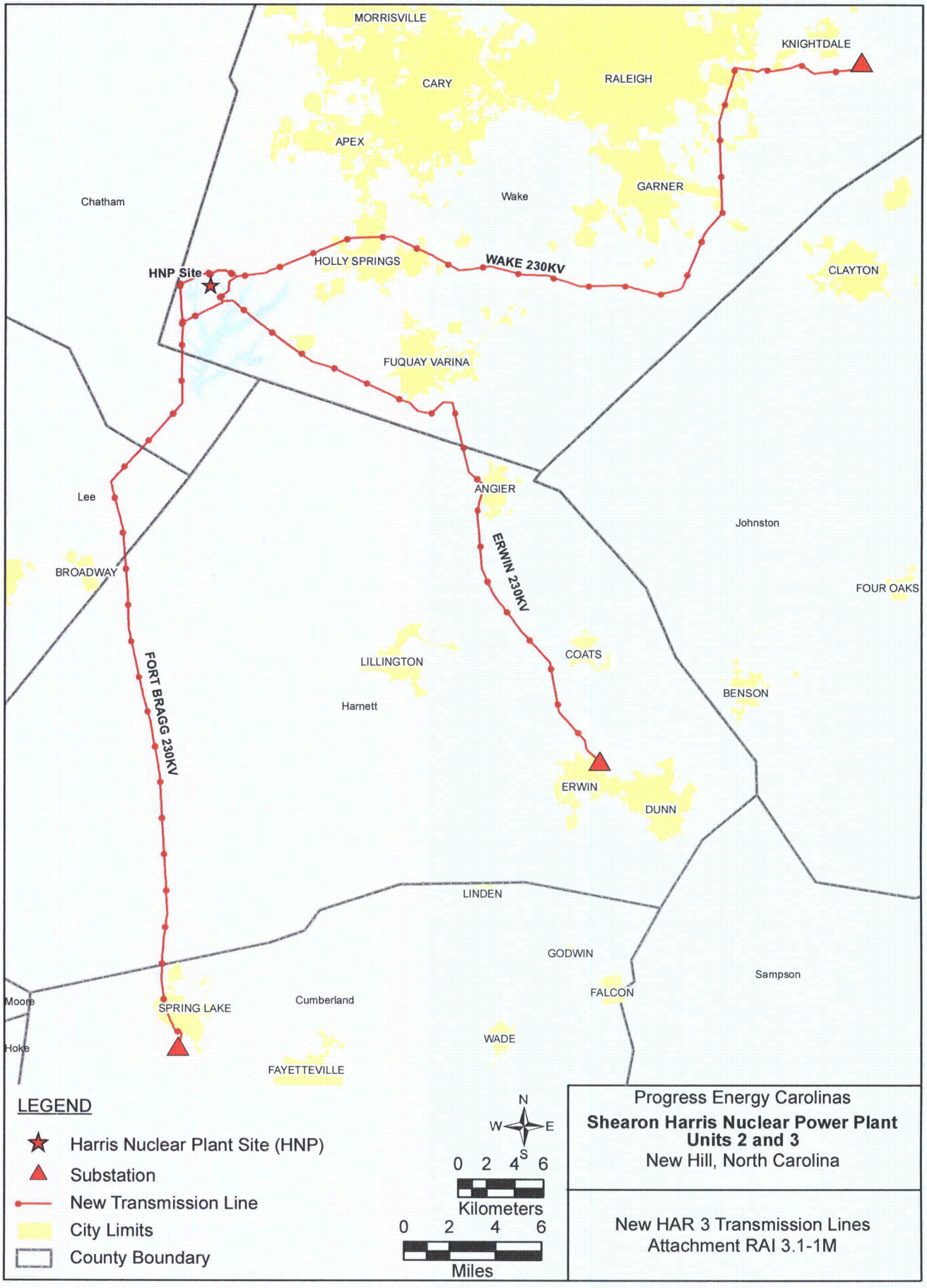
SHEARON HARRIS NUCLEAR POWER PLANT UNITS 2 AND 3
PROGRESS ENERGY, CAROLINAS, INC.

Sargent & Lundy

DRAWING NO.: HAG-80-X2-001

REV.: 1

SHEET: OF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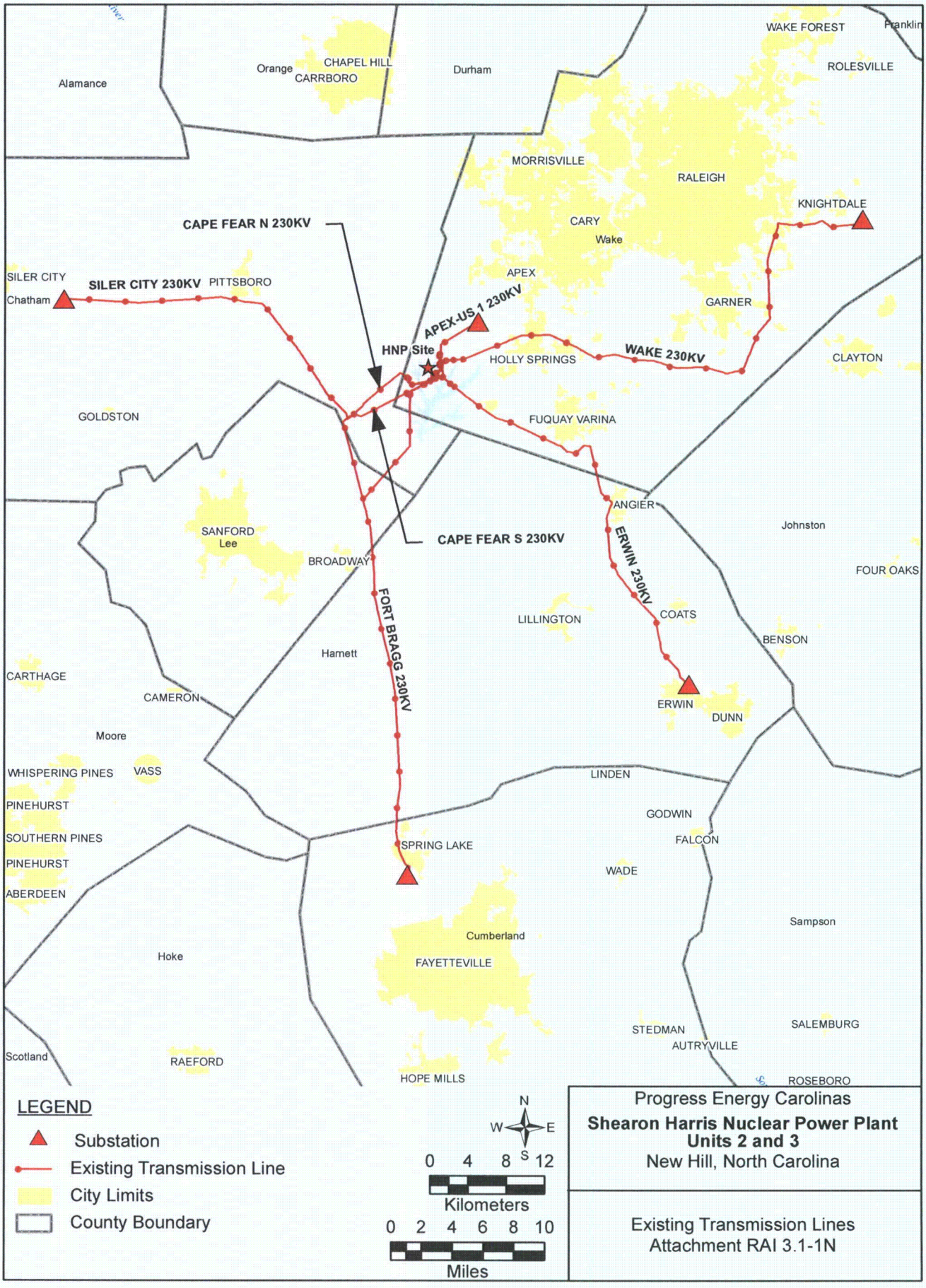
CARY
RALEIGH
APEX
GARNER
Chatham
Wake
HNP Site
HOLLY SPRINGS
WAKE 230KV
CLAYTON
FUQUAY VARINA
ANGIER
Lee
Johnston
BROADWAY
ERWIN 230KV
FOUR OAKS
FORT BRAGG 230KV
LILLINGTON
COATS
Harnett
BENSON
ERWIN
DUNN
LINDEN
GODWIN
Sampson
FALCON
Moore
SPRING LAKE
Cumberland
Hoke
WADE
FAYETTEVILLE
LEGEND
Harris Nuclear Plant Site (HNP)
Substation
New Transmission Line
City Limits
County Boundary
N
W
E
S
0 2 4 6
Kilometers
0 2 4 6
Miles
Progress Energy Carolinas
Shearon Harris Nuclear Power Plant
Units 2 and 3
New Hill, North Carolina
New HAR 3 Transmission Lines
Attachment RAI 3.1-1M


WAKE FOREST
Franklin
ROLESVILLE
Alamance
Orange
CHAPEL HILL
CARRBORO
Durham
MORRISVILLE
RALEIGH
KNIGHTDALE
CARY
Wake
CAPE FEAR N 230KV
APEX
SILER CITY
SILER CITY 230KV
PITTSBORO
Chatham
APEX-US 1 230KV
GARNER
HNP Site
HOLLY SPRINGS
WAKE 230KV
CLAYTON
GOLDSTON
FUQUAY VARINA
ANGIER
Johnston
SANFORD
Lee
CAPE FEAR S 230KV
ERWIN 230KV
BROADWAY
FOUR OAKS
FORT BRAGG 230KV
LILLINGTON
COATS
BENSON
Harnett
CARTHAGE
CAMERON
ERWIN
DUNN
Moore
WHISPERING PINES
VASS
LINDEN
PINEHURST
GODWIN
SOUTHERN PINES
FALCON
SPRING LAKE
PINEHURST
WADE
ABERDEEN
Sampson
Cumberland
Hoke
FAYETTEVILLE
STEDMAN
SALEMBURG
AUTRYVILLE
Scotland
RAEFORD
HOPE MILLS
ROSEBORO
LEGEND
Substation
Existing Transmission Line
City Limits
County Boundary
N
W
E
S
0 4 8 12
Kilometers
0 2 4 6 8 10
Miles
Progress Energy Carolinas
Shearon Harris Nuclear Power Plant
Units 2 and 3
New Hill, North Carolina
Existing Transmission Lines
Attachment RAI 3.1-1N