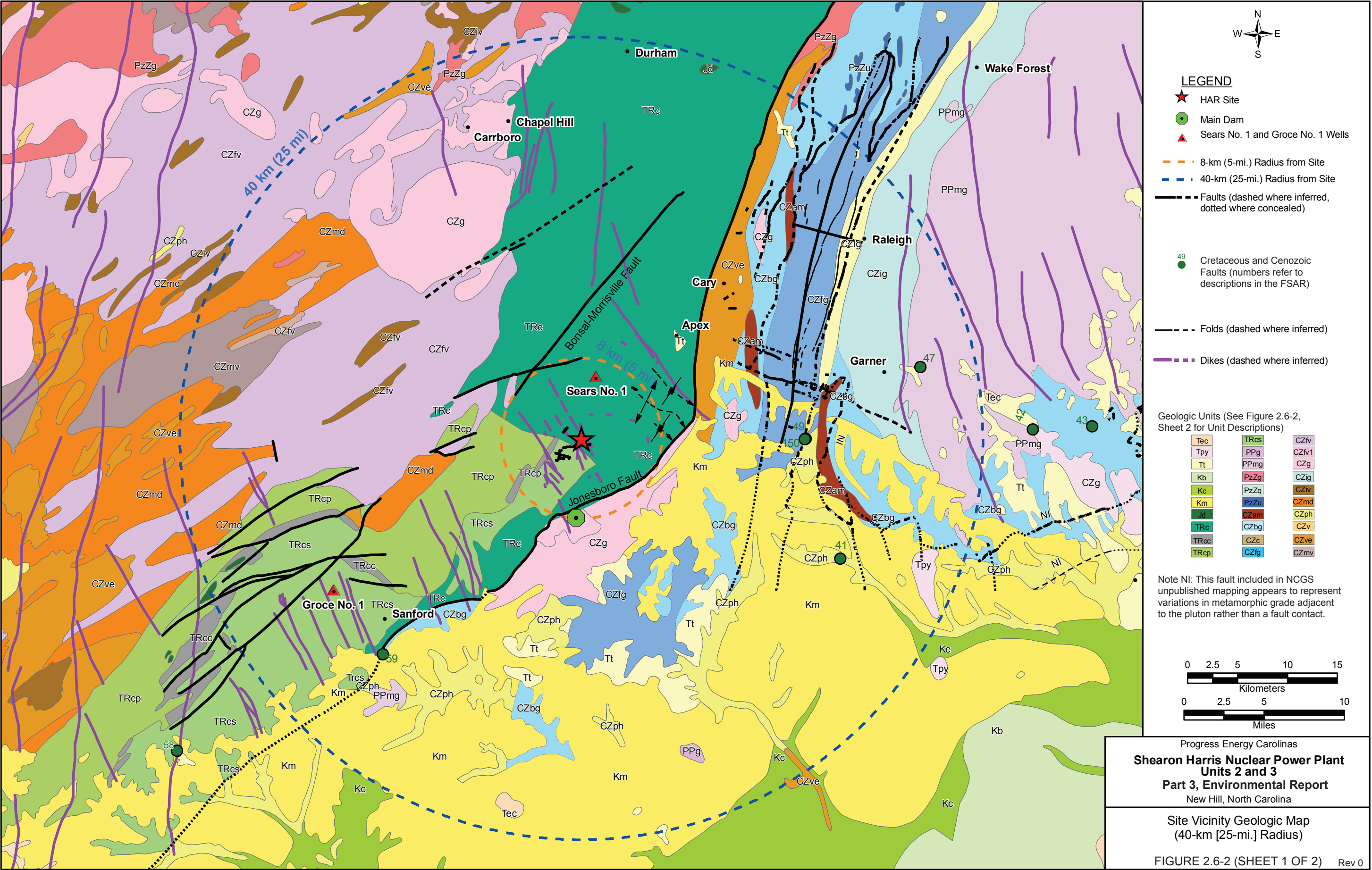




DESCRIPTION OF GEOLOGIC UNITS

|      |                                                                                                                                                                                                                                                                                                                                                                                 |      |                                                                                                                                                                                                              |      |                                                                                                                                                                   |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tt   | TERRACE DEPOSITS AND UPLAND SEDIMENT - Gravel, clayey sand, and sand and minor iron-oxide cemented sandstone.                                                                                                                                                                                                                                                                   | PPg  | GRANITIC ROCK (Pennsylvanian to Permian, 265-325 m.y.) - Megacrystic to equigranular.                                                                                                                        | CZmd | METAMUDSTONE AND META-ARGILLITE - Bedding plane and axial planar cleavage common; interbedded with metasandstone, metaconglomerate, and metavolcanic rock.        |
| Tpy  | YORKTOWN FORMATION AND DUPLIN FORMATION, UNDIVIDED - Yorktown Formation: Fossiliferous clay with varying amounts of fine-grained sand, bluish gray, shell material commonly concentrated in lenses; mainly in area north of Neuse River. Duplin Formation: Shelly, medium- to coarse-grained sand, sandy marl, and limestone, bluish gray; mainly in area south of Neuse River. | PPmg | FOLIATED TO MASSIVE GRANITIC ROCK (Pennsylvanian to Permian, 270-320 m.y.) - Megacrystic to equigranular.                                                                                                    | CZph | PHYLLITE AND SCHIST - Locally laminated and pyritic; includes phyllonite, sheared fine-grained metasediment, and metavolcanic rock.                               |
| Tec  | CASTLE HAYNE FORMATION - Comfort Member and New Hanover Member, undivided. Comfort Member: Bryozoan-echinoid skeletal limestone, locally dolomitized, solution cavities common. New Hanover Member: Phosphate-pebble conglomerate, micritic, thin; restricted to basal part of Castle Hayne Formation in southeastern counties.                                                 | PzZg | METAMORPHOSED GABBRO AND DIORITE - Foliated to massive.                                                                                                                                                      | CZve | METAVOLCANIC EPICLASTIC ROCK - Metamorphosed argillite, mudstone, volcanic sandstone, conglomerate, and volcanic rock.                                            |
| Kb   | BLACK CREEK FORMATION - Clay gray to black, lignitic; contains thin beds and laminae of fine-grained micaceous sand and thick lenses of cross-bedded sand. Glauconitic, fossiliferous clayey sand lenses in upper part.                                                                                                                                                         | PzZu | META-ULTRAMAFIC ROCK - Metamorphosed dunite and peridotite; serpentinite, soapstone, and other altered ultramafic rock. Only larger bodies shown.                                                            | CZmv | MAFIC METAVOLCANIC ROCK - Metamorphosed basalt flows and tuffs, dark green to black; interbedded with felsic and intermediate metavolcanic rock and metamudstone. |
| Kc   | CAPE FEAR FORMATION - Sandstone and sandy mudstone, yellowish gray to bluish gray, mottled red to yellowish orange, indurated, graded and laterally continuous bedding, blocky clay, faint cross-bedding, feldspar and mica common.                                                                                                                                             | CZam | AMPHIBOLITE - Metamorphosed mafic extrusive and intrusive rock; includes hornblende gneiss, thin layers of mica schist, and small non-layered masses of metadiorite and metagabbro.                          |      |                                                                                                                                                                   |
| Km   | MIDDENDORF FORMATION - Sand, sandstone, and mudstone, gray to pale gray with an orange cast, mottled; clay balls and iron-cemented concretions common, beds laterally discontinuous, cross bedding common.                                                                                                                                                                      | CZbg | BIOTITE GNEISS AND SCHIST- Inequigranular and megacrystic; in places contains garnet; interlayered and gradational with mica schist and amphibolite; includes small masses of granitic rock.                 |      |                                                                                                                                                                   |
| Jd   | DIABASE - Dikes, gray to black.                                                                                                                                                                                                                                                                                                                                                 | CZc  | VOLCANIC METACONGLOMERATE - Includes metagraywacke and metamudstone.                                                                                                                                         |      |                                                                                                                                                                   |
| TRc  | CHATHAM GROUP (undivided) - Conglomerate, fanglomerate, sandstone, and mudstone.                                                                                                                                                                                                                                                                                                | CZfg | FELSIC MICA GNEISS - Interlayered with graphitic mica schist and mica-garnet schist, commonly with kyanite; minor hornblende gneiss.                                                                         |      |                                                                                                                                                                   |
| TRcc | CUMNOCK FORMATION - Sandstone and mudstone, gray to black; coal beds and carbonaceous shale. Grades into Pekin and Sanford formations.                                                                                                                                                                                                                                          | CZfv | FELSIC METAVOLCANIC ROCK - Metamorphosed dacitic to rhyolitic flows and tuffs, light gray to greenish gray; interbedded with mafic and intermediate metavolcanic rock, meta-argillite, and metamudstone.     |      |                                                                                                                                                                   |
| TRcp | PEKIN FORMATION - Conglomerate, sandstone, and mudstone.                                                                                                                                                                                                                                                                                                                        | CZg  | METAMORPHOSED GRANITIC ROCK (Late Proterozoic to late Cambrian, 520-650m.y.) - Megacrystic, well-foliated, locally contains hornblende.                                                                      |      |                                                                                                                                                                   |
| TRcs | SANFORD FORMATION - Conglomerate, fanglomerate, sandstone, and mudstone.                                                                                                                                                                                                                                                                                                        | CZig | INJECTED GNEISS - Biotite gneiss and schist intruded by numerous sills and dikes of granite, pegmatite, and apatite; minor hornblende gneiss.                                                                |      |                                                                                                                                                                   |
|      |                                                                                                                                                                                                                                                                                                                                                                                 | CZlg | LINEATED-FELSIC MICA GNEISS - White to pink with strong lineation of muscovite-biotite streaks and prismatic quartz aggregates; planar foliation and layering weak; minor mica schist and hornblende gneiss. |      |                                                                                                                                                                   |
|      |                                                                                                                                                                                                                                                                                                                                                                                 | CZiv | INTERMEDIATE METAVOLCANIC ROCK - Metamorphosed andesitic tuffs and flows, medium to dark grayish green; minor felsic and mafic metavolcanic rock.                                                            |      |                                                                                                                                                                   |

Progress Energy Carolinas  
**Shearon Harris Nuclear Power Plant  
Units 2 and 3**  
**Part 3, Environmental Report**  
New Hill, North Carolina

Site Vicinity Geologic Map  
(40-km [25-mi.] Radius)