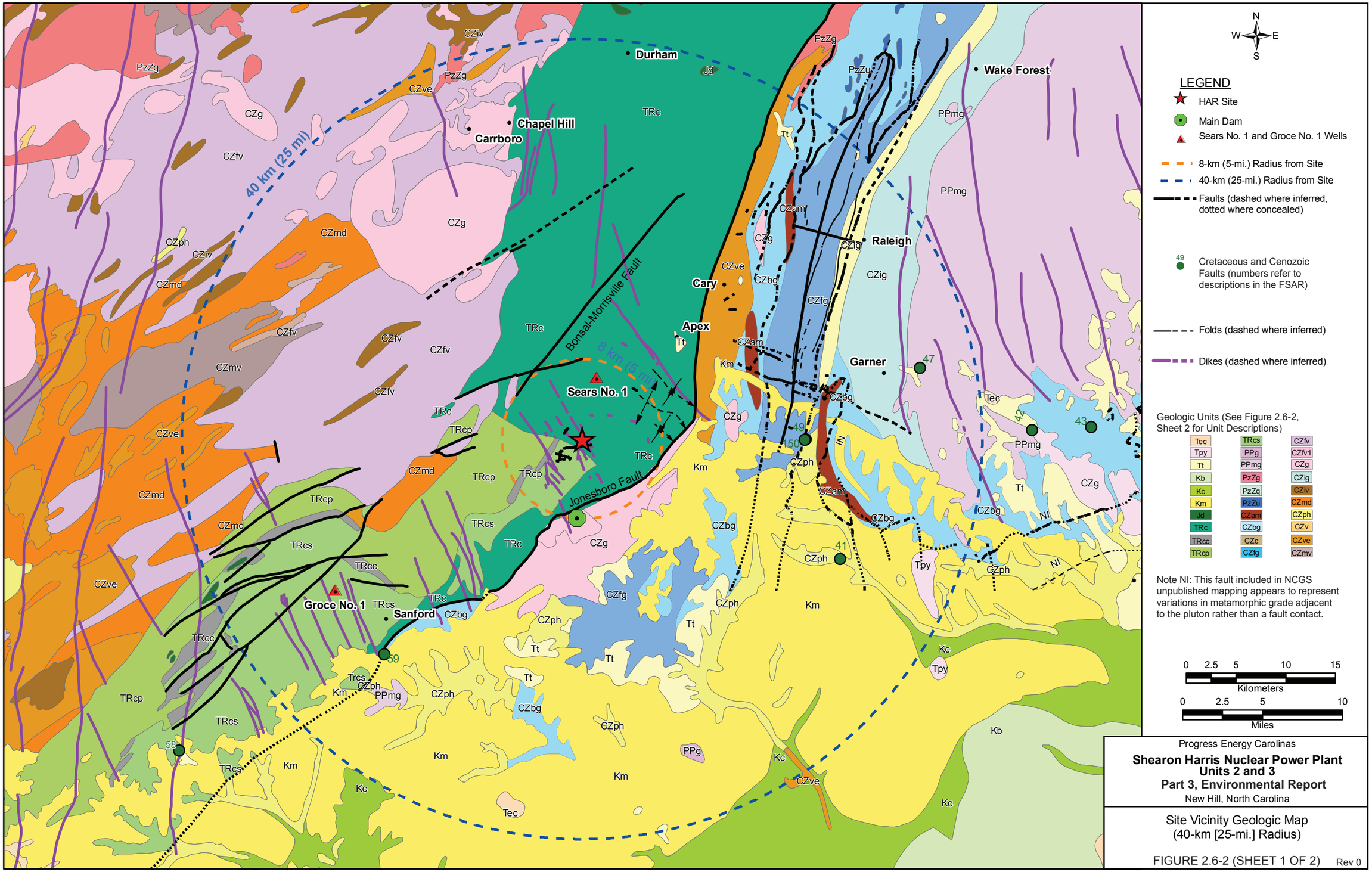

Progress Energy Carolinas

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)

FIGURE 2.6-2 (SHEET 1 OF 2) Rev 0

DESCRIPTION OF GEOLOGIC UNITS

Tt TERRACE DEPOSITS AND UPLAND SEDIMENT - Gravel, clayey sand, and sand and minor iron-oxide cemented sandstone.

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.

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.

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.

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.

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.

Jd DIABASE - Dikes, gray to black.

TRc CHATHAM GROUP (undivided) - Conglomerate, fanglomerate, sandstone, and mudstone.

TRcc CUMNOCK FORMATION - Sandstone and mudstone, gray to black; coal beds and carbonaceous shale. Grades into Pekin and Sanford formations.

TRcp PEKIN FORMATION - Conglomerate, sandstone, and mudstone.

TRcs SANFORD FORMATION - Conglomerate, fanglomerate, sandstone, and mudstone.

PPg GRANITIC ROCK (Pennsylvanian to Permian, 265-325 m.y.) - Megacrystic to equigranular.

PPmg FOLIATED TO MASSIVE GRANITIC ROCK (Pennsylvanian to Permian, 270-320 m.y.) - Megacrystic to equigranular.

PzZg METAMORPHOSED GABBRO AND DIORITE - Foliated to massive.

PzZu META-ULTRAMAFIC ROCK - Metamorphosed dunite and peridotite; serpentinite, soapstone, and other altered ultramafic rock. Only larger bodies shown.

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.

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.

CZc VOLCANIC METACONGLOMERATE - Includes metagraywacke and metamudstone.

CZfg FELSIC MICA GNEISS - Interlayered with graphitic mica schist and mica-garnet schist, commonly with kyanite; minor hornblende gneiss.

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.

CZg METAMORPHOSED GRANITIC ROCK (Late Proterozoic to late Cambrian, 520-650m.y.) - Megacrystic, well-foliated, locally contains hornblende.

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.

CZmd METAMUDSTONE AND META-ARGILLITE - Bedding plane and axial planar cleavage common; interbedded with metasandstone, metaconglomerate, and metavolcanic rock.

CZph PHYLLITE AND SCHIST - Locally laminated and pyritic; includes phyllonite, sheared fine-grained metasediment, and metavolcanic rock.

CZve METAVOLCANIC EPICLASTIC ROCK - Metamorphosed argillite, mudstone, volcanic sandstone, conglomerate, and volcanic rock.

CZmv MAFIC METAVOLCANIC ROCK - Metamorphosed basalt flows and tuffs, dark green to black; interbedded with felsic and intermediate metavolcanic rock and metamudstone.

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FIGURE 2.6-2 (SHEET 2 OF 2)

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