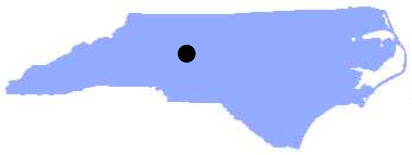
DEQ/DWR
FACILITY SHEET FOR NPDES PERMIT DEVELOPMENT (Major Mod)

NPDES No. NC0004774

FACILITY INFORMATION			
Permittee:	Duke Energy Carolinas, LLC		
Permittee Address:	526 S. Church Street, Mail Code EC3XP, Charlotte, NC 28202		
Facility Name:	Buck Combined Cycle Station (formerly Buck Steam Station)		
Facility Address:	1385 Dukeville Road, Salisbury, NC 28146	Facility County:	Rowan
Facility Type:	Industrial – Steam Electric Power Generation	SIC Code(s):	4911
Permitted Flow:	Not Limited	Facility Status:	Existing
Waste Type:	Industrial	WWTP Grade:	PC-1

WATERBODY INFORMATION		ADDITIONAL INFORMATION	
Waterbody Name:	Yadkin River	Regional Office:	Mooresville
Classification:	WS-V	USGS Topo Quad:	E17NW
Subbasin:	03-07-06	Permit Action:	Major Modification
HUC8:	03040102	Permit Writer:	Sergei Chernikov, Ph.D.
Drainage Area (mi^2):	3,452	Date:	October 28, 2019
Summer 7Q10 (cfs):	1,030		
Winter 7Q10 (cfs):	1,480		
Average Flow (cfs):	4,960		
Listed:	Not for POCs		
IWC (%):	0.1%, 0.3%, 0.7%, & 100%		

I. PROPOSED PERMIT ACTION

Duke Energy Carolina, LLC, has applied for a **Major Modification** to permit NC0004774 for its Buck Combined Cycle Station (formerly, the Buck Steam Station). The Division of Water Resources has reviewed the application and additional information submitted by Duke Energy and has made a tentative determination to grant this request for a Major Modification.

Duke Energy requests to remove the following condition from Outfall 001A and Outfall 006: "The daily average temperature of the effluent shall be such as not to exceed 10°C (50°F) if the daily average intake temperature is below 2.5°C (36.5°F), and shall not exceed two times the intake temperature (°F) minus 23 if the daily average intake temperature ranges from 2.5°C (36.5°F) to 12.8°C (55°F) when only units with the same control system are operating."

This requirements originates from an EPA nomograph from 1976 as the basis for the restrictions to protect aquatic life from cold shock due to the thermal load from the retired Buck Fossil Steam Station. This was first approved by North Carolina DENR in 1993. Additional delta T thermal limits intended to protect warm water fish from cold shock in the event of a winter season plant shut-down event. Historically, fossil steam stations could operate units separately, thus varying discharge flow and heat load to the receiving stream. If all units functioned either on one control unit or as autonomous units, this configuration could have impacts on the receiving stream if all units were shutdown at once versus scaled over time. If all steam units were online, withdrawing water, heating it, and then discharging the heated effluent, losing all units at once would cause a shock to the receiving stream and the aquatic life surrounding the discharge point. The thermal rise calculation paired with the control unit designation seeks to regulate the potential thermal shock of losing one or multiple operating units. Combined cycle plants discharge significantly less heated effluent, i.e. approximately 0.6 MGD compared to 170 MGD, than the demolished steam station, and have cooling towers that help regulate the effluent discharge temperature.

Therefore, this condition is no longer applicable. The Water Sciences Section reviewed this request and did not have any objections against eliminating it.