Contract No. [insert]
Rev Date: 6/16/2014

OPERATING AGREEMENT

executed by

THE UNITED STATES OF AMERICA

acting by and through the

SAVANNAH DISTRICT, CORPS OF ENGINEERS

and the

SOUTHEASTERN POWER ADMINISTRATION

and

DUKE ENERGY CAROLINAS, LLC

THIS OPERATING AGREEMENT, executed as of the last date noted on the signature pages, between the UNITED STATES OF AMERICA (hereinafter called the Government), acting by and through the SAVANNAH DISTRICT ENGINEER (hereinafter called the District Engineer), and the SOUTHEASTERN POWER ADMINISTRATOR (hereinafter called the Administrator), and DUKE ENERGY CAROLINAS, LLC (hereinafter called the Company), a limited liability company organized and existing under the laws of the State of North Carolina, with the District Engineer, the Administrator, and the Company hereinafter singularly called Party and collectively called the Parties;

0.1 WHEREAS the Company pursuant to the original 50-year license issued by the Federal Power Commission, predecessor to the Federal Energy Regulatory Commission (hereinafter called FERC), constructed on certain tributaries of the Savannah River a project known as the Keowee-Toxaway Hydroelectric Project, designated as FERC Project No. 2503 (hereinafter called the Keowee-Toxaway Project); and

0.2 WHEREAS the Keowee-Toxaway Project is composed of two adjoining developments, the most downstream of which is called the Keowee Development, which includes a reservoir (Lake Keowee) and a conventional hydroelectric station (Keowee Hydro Station), and the other the Jocassee Development, which includes a reservoir (Lake Jocassee) and a pumped storage hydroelectric station (Jocassee Pumped Storage Station); and

0.3 WHEREAS the Company also owns and operates the Bad Creek Pumped Storage Project, which includes the Bad Creek Reservoir and Bad Creek Pumped Storage Station, operated under a separate FERC license (Project No. 2740, hereinafter called the Bad Creek Project) on a tributary to Lake Jocassee in the Savannah River Basin; and

0.4 WHEREAS the Company operates the Keowee-Toxaway Project and the Bad Creek Project (hereinafter collectively called the Company Projects) in coordination with one another; and

0.5 WHEREAS the Government has three existing hydroelectric reservoir projects on the Savannah River downstream of the Keowee-Toxaway Project known as the J. Strom Thurmond (hereinafter called Thurmond), Richard B. Russell (hereinafter called Russell), and Hartwell projects (hereinafter collectively called the Federal Projects); and

0.6 WHEREAS the Federal Projects are operated and maintained by the District Engineer and the Administrator markets the available power and energy from the Federal Projects; and

0.7 WHEREAS Article 32 of the original FERC license for the Keowee-Toxaway Project required the Company to enter into an agreement with an authorized representative of the Chief of Engineers, Department of the Army, and an authorized representative of the Department of the Interior, assuring the Keowee-Toxaway Project would be operated so the capability of those downstream Federal Projects in existence at the time to meet power generating requirements would not be impaired, and further recognizing the requirement for water releases from Thurmond Lake (the most downstream reservoir) for low flow control and other responsibilities in connection with the Hartwell and Thurmond lakes, including flood control, and such agreement was executed in 1968 (hereinafter called the 1968 Agreement); and

0.8 WHEREAS the Company and 16 other organizations entered into a binding contract (hereinafter called the Relicensing Agreement) with an effective date of December 1, 2013, and which Relicensing Agreement includes among other things a Low Inflow Protocol (hereinafter called the LIP) specifying operating procedures for the Company Projects during periods of drought; and

0.9 WHEREAS the District Engineer instituted a Drought Plan (hereinafter called the DP) in 1989 to address operation of the Federal Projects during droughts and said DP was last updated in 2012; and

0.10 WHEREAS the Parties desire to enter into an Operating Agreement that is consistent with both the LIP and the DP; and

0.11 WHEREAS the District Engineer, the Administrator, and the Company are terminating the 1968 Agreement and simultaneously executing this Operating Agreement, developed after comprehensively assessing potential effects of this Operating Agreement and in conjunction with the FERC relicensing of the Keowee-Toxaway Project; and

0.12 WHEREAS the functions of the Administrator have been transferred from the Department of the Interior to the Department of Energy; and

0.13 WHEREAS the District Engineer and the Administrator have been authorized as representatives of the Department of the Army and the Department of Energy, respectively, to enter into the said Operating Agreement with the Company;

NOW, THEREFORE, the Parties hereto mutually covenant and agree as follows:

Section 1. <u>Principle of Operation of the Company Projects in Conjunction with the Downstream Federal Projects</u>

1.1 The principle of equalizing the percentage of combined remaining usable water storage in the Company Projects with the percentage of combined remaining usable water storage in the Federal Projects will be followed to determine the minimum weekly water release requirement from the Keowee Development, subject to the following provisions.

1.2 For purposes of this Operating Agreement, the usable storage in the respective projects is as defined by the reservoir elevation curves shown on Exhibit 1, attached hereto and by reference made a part hereof, and described as follows:

(a) <u>Bad Creek Project</u>. The volume in the Bad Creek Reservoir between elevation 2150 feet above Mean Sea Level (AMSL) (National Geodetic Vertical Datum of 1929: NGVD 29) and 2310 feet AMSL

(b) <u>Jocassee Development</u>. The volume in Lake Jocassee between elevation 1080 feet AMSL and 1110 feet AMSL. Note the elevation curves for the Jocassee Development also identify Stage Minimum Elevations for each Stage (i.e., Stage 0 through 4) of the LIP.

(c) <u>Keowee Development</u>. The volume in Lake Keowee between elevation 790 feet AMSL and 800 feet AMSL. Note the elevation curves for the Keowee Development also identify Stage Minimum Elevations for each Stage (i.e., Stage 0 through 4) of the LIP.

(d) <u>Hartwell Project</u>. The volume in Hartwell Lake between elevation 625 feet AMSL and the curve denoting top-of-power pool and minimum flood control pool.

(e) <u>Russell Project</u>. The volume in Russell Lake between elevation 470 feet AMSL and 475 feet AMSL.

(f) <u>Thurmond Project</u>. The volume in Thurmond Lake between elevation 312 feet AMSL and the curve denoting top-of-power pool and minimum flood control pool.

1.3 For purposes of this Operating Agreement, remaining usable storage at any time for the Company Projects is the sum of the volume of water contained between each reservoir's lowest elevation as described in subsection 1.2 and its actual reservoir elevation as measured in the forebay of each reservoir by the Company. The remaining usable storage for the Federal Projects at any time is the sum of the volume of water contained between each reservoir's lowest elevation as described in subsection 1.2 and the actual reservoir elevation as measured in the forebay of each reservoir by the District Engineer. The remaining usable storage for the Company Projects is expressed as a percentage of the sum of the usable storage in the Company Projects. The remaining usable storage for the Federal Projects is expressed as percentage of the sum of the usable storage in the Federal Projects.

Section 2. <u>Determination of Minimum Weekly Water Release Requirement from the Keowee Development</u>

2.1 The minimum weekly water release requirement from the Keowee Development will be calculated by the District Engineer as described below, subject to the concurrence of the other Parties. The minimum weekly water release requirement will be calculated based on the remaining usable water storage at each reservoir at midnight Tuesday and the water shall be released during the following seven days (i.e., Wednesday through Tuesday), unless the District Engineer requests a lesser amount.

2.2 For purposes of this Operating Agreement, water releases from the Keowee Development include hydroelectric generation flows, calculated flood gate releases, leakage through the Keowee Hydro Station (estimated to be 50 cubic feet per second (cfs)), and dam seepage (estimated to be 1 cfs).

2.3 Whenever the remaining usable storage at the Federal Projects is 90 percent or above or the remaining usable storage at the Company Projects is less than the remaining usable storage at the Federal Projects at Tuesday midnight, there shall be no required minimum weekly water release from the Keowee Development during the following seven days. Further, if the remaining usable storage at the Federal Projects is below 90 percent for reasons other than reduced inflow to the Federal Projects, there shall be no required minimum weekly water release from the Keowee Development during the following seven days. If the Federal Projects are intentionally maintained at lower levels (e.g., to support maintenance situations), the Company shall not be required to provide a greater volume of minimum weekly water releases from the Keowee Development than would have otherwise been required.

2.4 Whenever the remaining usable storage at the Federal Projects is below 90 percent and equal to or greater than 85 percent (e.g., 88 percent) at Tuesday midnight, the minimum weekly water release requirement from the Keowee Development during the following seven days shall be calculated so the remaining usable storage at the Company Projects will be twice as many percentage points below 100 percent (e.g., 4 percent below or usable storage of 96 percent) as the remaining usable storage at the Federal Projects was below 90 percent on Tuesday midnight, except the minimum weekly water release required in the following seven days from the Keowee Development shall not exceed 25,000 acre-feet.

2.5 Whenever the remaining usable storage at the Federal Projects is below 85 percent and equal to or greater than 80 percent (e.g., 82 percent) at Tuesday midnight, the minimum weekly water release requirement from the Keowee Development during the following seven days shall be calculated so the remaining usable storage at the Company Projects will be twice as many percentage points below 100 percent as the remaining usable storage at the Federal Projects was below 90 percent on Tuesday midnight (e.g., 16 percent below, or usable storage of 84 percent), except the minimum weekly water release required in the following seven days from the Keowee Development shall not exceed 20,000 acre-feet.

2.6 Whenever the remaining usable storage at the Federal Projects is below 80 percent (e.g., 79 percent) or the DP is in Level 1 at Tuesday midnight, the minimum weekly water release requirement from the Keowee Development during the following seven days shall be determined so the remaining usable storage at the Company Projects will be the same

percentage as the remaining usable storage at the Federal Projects was at Tuesday midnight (e.g., 79 percent), except the minimum weekly water release required in the following seven days from the Keowee Development shall not exceed 18,750 acre-feet.

2.7 Whenever the DP is in Level 2 at Tuesday midnight, the minimum weekly water release requirement from the Keowee Development during the following seven days shall be calculated so the remaining usable storage at the Company Projects will be the same percentage as the remaining usable storage at the Federal Projects was at Tuesday midnight, except the minimum weekly water release required in the following seven days from the Keowee Development shall not exceed 15,000 acre-feet.

2.8 Whenever the DP is in Level 3 and the remaining usable storage at the Federal Projects is at or above 25 percent at Tuesday midnight, the minimum weekly water release requirement from the Keowee Development during the following seven days shall be calculated so the remaining usable storage at the Company Projects will be the same percentage as the remaining usable storage at the Federal Projects was at Tuesday midnight, except the minimum weekly water release required in the following seven days from the Keowee Development shall not exceed 10,000 acre-feet.

2.9 Whenever the remaining usable storage at the Federal Projects is below 25 percent but greater than 12 percent at Tuesday midnight, the minimum weekly water release requirement from the Keowee Development during the following seven days shall be calculated so the remaining usable storage at the Company Projects will be the same percentage as the remaining usable storage at the Federal Projects was on Tuesday midnight, except the water release required in the following seven days from the Keowee Development shall not exceed 7,500 acre-feet.

2.10 Whenever the remaining usable storage at the Company Projects is at or below 12 percent at Tuesday midnight, only Keowee Hydro Station leakage and dam seepage (estimated at 650 acre-feet per week) will be required to be released from the Keowee Development during the following seven days..

2.11 Notwithstanding the above Sections 2.3 through 2.10, prior to December 1, 2019, the Company shall not be required to provide any water releases from the Keowee Development that would cause the remaining usable storage in the Company Projects to drop below 71,408 acre-feet. This represents the volume of water in the Keowee Development between elevations 794.6 feet AMSL and 790.0 feet AMSL. The period prior to December 1, 2019, provides time for the Company to modify its Oconee Nuclear Station to allow its operation at Lake Keowee levels below 794.6 feet AMSL.

2.12 Notwithstanding the above Sections 2.3 through 2.10, the Company shall not be required to provide water releases from the Keowee Development that would cause the elevation of either Lake Jocassee or Lake Keowee to fall below its respective Stage Minimum Elevations as required by the LIP and as shown in Exhibit 1.

Section 3. <u>Operation of the Keowee-Toxaway Project during Floods and for Navigation</u>

3.1 The Company will operate the Company Projects during flood periods so as not to cause peak discharges downstream of the Keowee Development greater than those which would have occurred in the absence of the Company Projects, except due to Acts of God

or other Force Majeure events, in accordance with ER 1110-2-241 and the Flood Control Act of 1944. During flood periods, close cooperation between the Company and the District Engineer will be exercised.

3.2 Except during floods or other Force Majeure events, the Company shall release water from the Keowee Development at such rate or such volume as the Secretary of the Army may prescribe in the interest of navigation as provided in the Company's license for the Keowee-Toxaway Project and in accordance with ER 1110-2-241 and the Flood Control Act of 1944.

Section 4. Exchange of Information

On Wednesday of each week, the Parties hereto will exchange information on current and proposed water releases, pool elevations and other operating conditions pertinent to the operation of the Company Projects and the Federal Projects for the purpose of carrying out the provisions of this Operating Agreement.

Section 5. Protection of Water Supply

5.1 The District Engineer will require any owner of a Large Water Intake (i.e., water intake with a maximum capacity greater than or equal to one million gallons per day) who is allocated water from the Federal Projects after the Effective Date of this Operating Agreement to implement coordinated water conservation measures when the DP is in effect similar to the water conservation measures required by the LIP for Large Water Intake owners on the Company Projects. Only that portion of the water allocated after the Effective Date of this Operating Agreement will be subject to the requirements of this subsection 5.1.

5.2 The Company will require owners of Large Water Intakes on the Company Projects to comply with the LIP.

5.3 The District Engineer and the Company will require whenever feasible that all Large Water Intakes used for municipal, industrial and power generation purposes that are constructed, expanded or rebuilt on the Company Projects and the Federal Projects after the Effective Date of this Operating Agreement be capable of operating at their permitted capacities at reservoir elevations as low as the applicable hydroelectric station can operate.

5.4 The District Engineer and the Company will encourage all water users withdrawing water from their respective reservoirs to conserve water in a coordinated manner when the DP is in effect similar to the water conservation measures required by the LIP on the Company Projects.

Section 6. Term of Agreement

This Operating Agreement shall become effective with the date of the last signature (the Effective Date of this Operating Agreement) and terminate with the expiration of the first non-annual FERC license for the Keowee-Toxaway Project issued after 2014.

Section 7. Modification of Operating Agreement and Handling of New Data

7.1 Any Party to this Operating Agreement can request modification of this Operating Agreement by notifying the other Parties in writing. Within 30 days following such written notice, the Party requesting the modification will convene a meeting of the Parties to discuss the proposed modification. Each Party shall use its best effort to reach timely agreement on the requested modification. This Operating Agreement can be modified only when all Parties agree with and sign the proposed modification.

7.2 As a minimum, the Parties shall meet to review this Operating Agreement and consider if modifications are needed if: (i) the LIP is modified in such a manner as to further restrict the Company's ability to make flow releases from the Keowee Development during droughts or (ii) the DP is modified in such a manner as to allow the District Engineer to make greater flow releases from the Thurmond Project during droughts. For the purposes of this subsection 7.2, short-term, modest increases in flow releases (e.g., releasing 3,800 cfs instead of 3,100 cfs for three months while in DP Level 3) from the Thurmond Project as a result of implementing adaptive management requested by other state and / or federal agencies to improve water quality in Savannah Harbor will not trigger a need to review the Operating Agreement.

7.3 If the Company or the District Engineer acquires new data revising the usable water storage volumes or Keowee Hydro Station leakage and dam seepage rates used in implementing this Operating Agreement, this new data will be provided to the other Parties by written notice for their review and if after 30-days review no Party objects to the accuracy of such new data, the Parties agree to use these new data in calculations required by this Operating Agreement. Any such change in usable water storage volumes or Keowee Hydro Station leakage or dam seepage rates shall not require a formal modification (i.e., with signatures) of this Operating Agreement.

Section 8. Filing of Agreement

Once it becomes effective, the Company shall file a copy of this Operating Agreement with the FERC.

Section 9. Miscellaneous Agreements

9.1 Notice. Each Party shall designate a representative for the receipt of notices and communicate its representative's contact information with the other Parties. All notices required to be given under this Operating Agreement shall be in writing and be given by

personal delivery, overnight express service, or U.S. mail to each Party. The sender shall retain proof of posting or delivery, and notices shall be effective upon the date and time identified on the proof of posting or delivery. As designated representatives change over time, each Party shall be responsible for providing the other Parties with their updated contact information in a timely and accurate manner.

9.2 Human Health and Safety. Nothing in this Operating Agreement shall limit any Party's ability to take any and all lawful actions at its projects to protect human health and safety, to protect its equipment from damage, to ensure the stability of the regional electric grid, to protect the equipment of Large Water Intake owners from damage, and to ensure the stability of public water supply systems; provided nothing in this Operating Agreement obligates any Party to protect the equipment of Large Water Intake owners from damage or to ensure the stability of public water supply systems. The Parties acknowledge such protection measures may be implemented without prior consultation or notification.

9.3 Protection of Legal Obligations. Nothing in this Operating Agreement shall require any Party to take actions inconsistent with its obligations under existing contracts (including but not limited to the Relicensing Agreement for the Company), licenses, other existing legal obligations, or Congressional authorizations. Each Party represents it possesses the requisite authority to enter into this Operating Agreement and to fulfill its requirements. If a Party subsequently determines a requirement of this Operating Agreement prevents compliance with an existing legal obligation, it may request modification of the Operating Agreement pursuant to Section 7.

9.4 Force Majeure. Force Majeure shall mean: (a) war, riots, insurrection, rebellion, floods, hurricanes, tornadoes, earthquakes, storms, and other natural calamities excluding drought; or (b) acts or inaction of any government authority which directly affect the operation of the Company Projects or its Oconee Nuclear Station. Such acts, events or conditions listed in (a) and (b) above shall only be deemed a Force Majeure to the extent they: (i) directly impact the Company's ability to release water to the Federal Projects while continuing to operate the Company Projects or its Oconee Nuclear Station in compliance with its operating licenses or the Relicensing Agreement and are beyond the reasonable control of the Company when claiming a delay or inability to perform, and (ii) are not the result of the willful misconduct or negligent act or omission of the Company. Any delays in performance, including the inability to perform, by the Company shall not constitute a default or breach hereunder if and to the extent such delays of performance, including the inability to perform, are caused by a Force Majeure event.

9.5 1968 Agreement is Terminated. The Parties agree and acknowledge the 1968 Agreement is hereby terminated and of no further force or effect coincident with the affixing of the last of the three Party's signatures on this Operating Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Operating Agreement to be executed in several counterparts as of the day and year last written below.

UNITED STATES OF AMERICA

Department of the Army

By _____ _____
District Engineer Date
Corps of Engineers
Savannah, Georgia 31402

Department of Energy

By _____ _____
Administrator Date
Southeastern Power Administration
Elberton, Georgia 30635

DUKE ENERGY CAROLINAS, LLC

By _____ _____
Steven D. Jester, Vice-President Date
Water Strategy, Hydro Licensing, and
Lake Services
Duke Energy Carolinas, LLC
Charlotte, North Carolina 28201

(SEAL)

ATTEST:

_____
Secretary

Bad Creek Project, Operational Target Curves

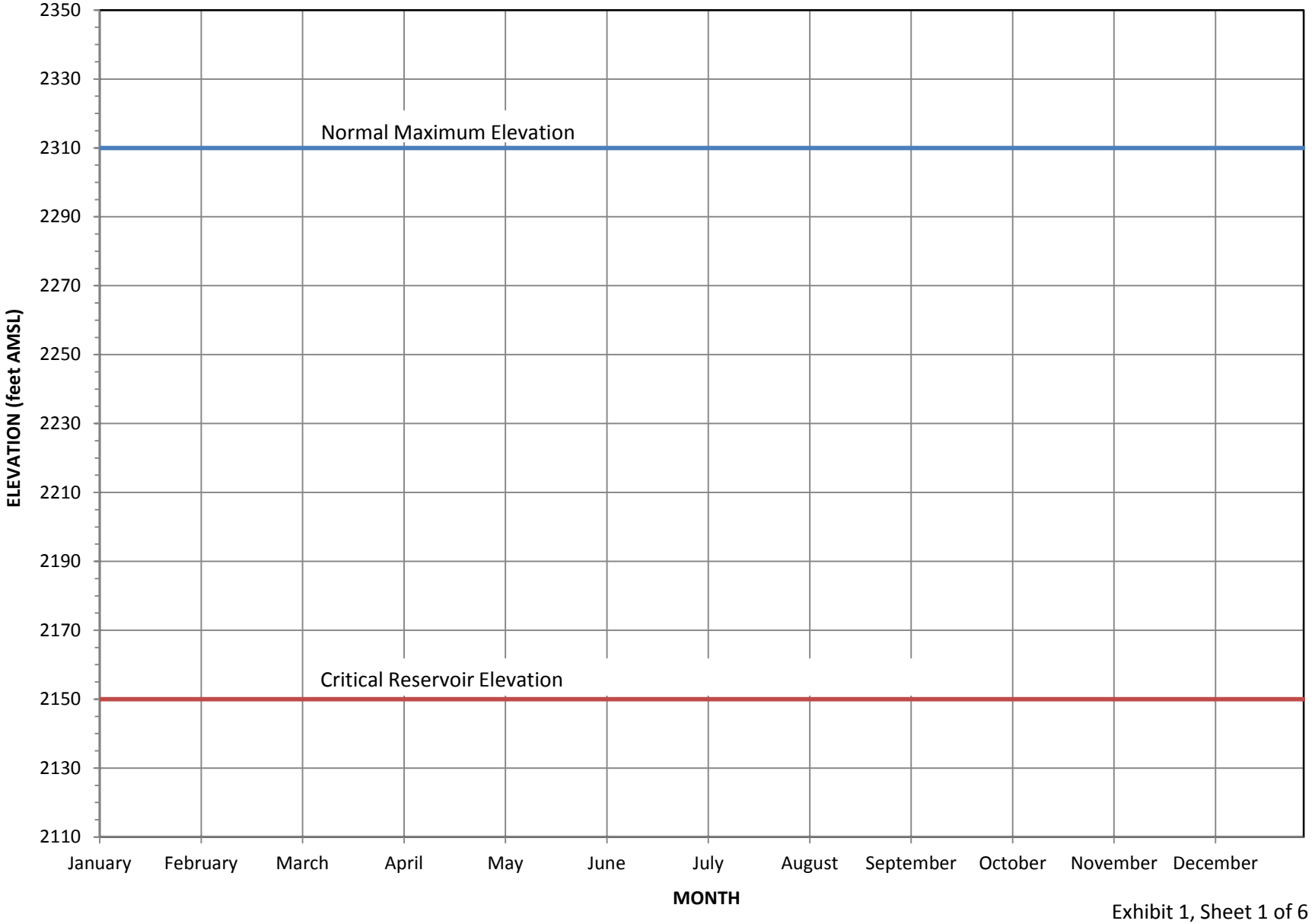
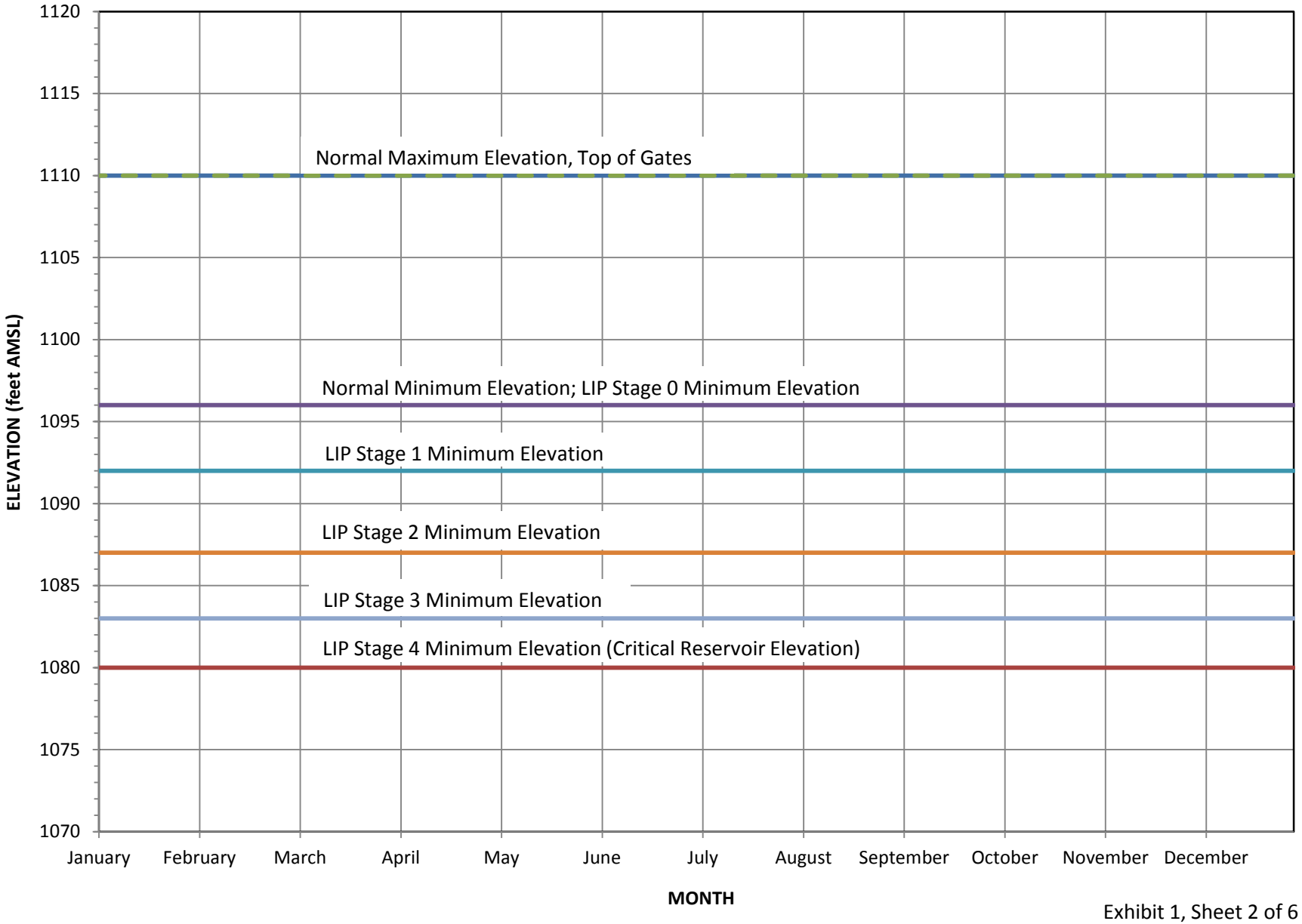
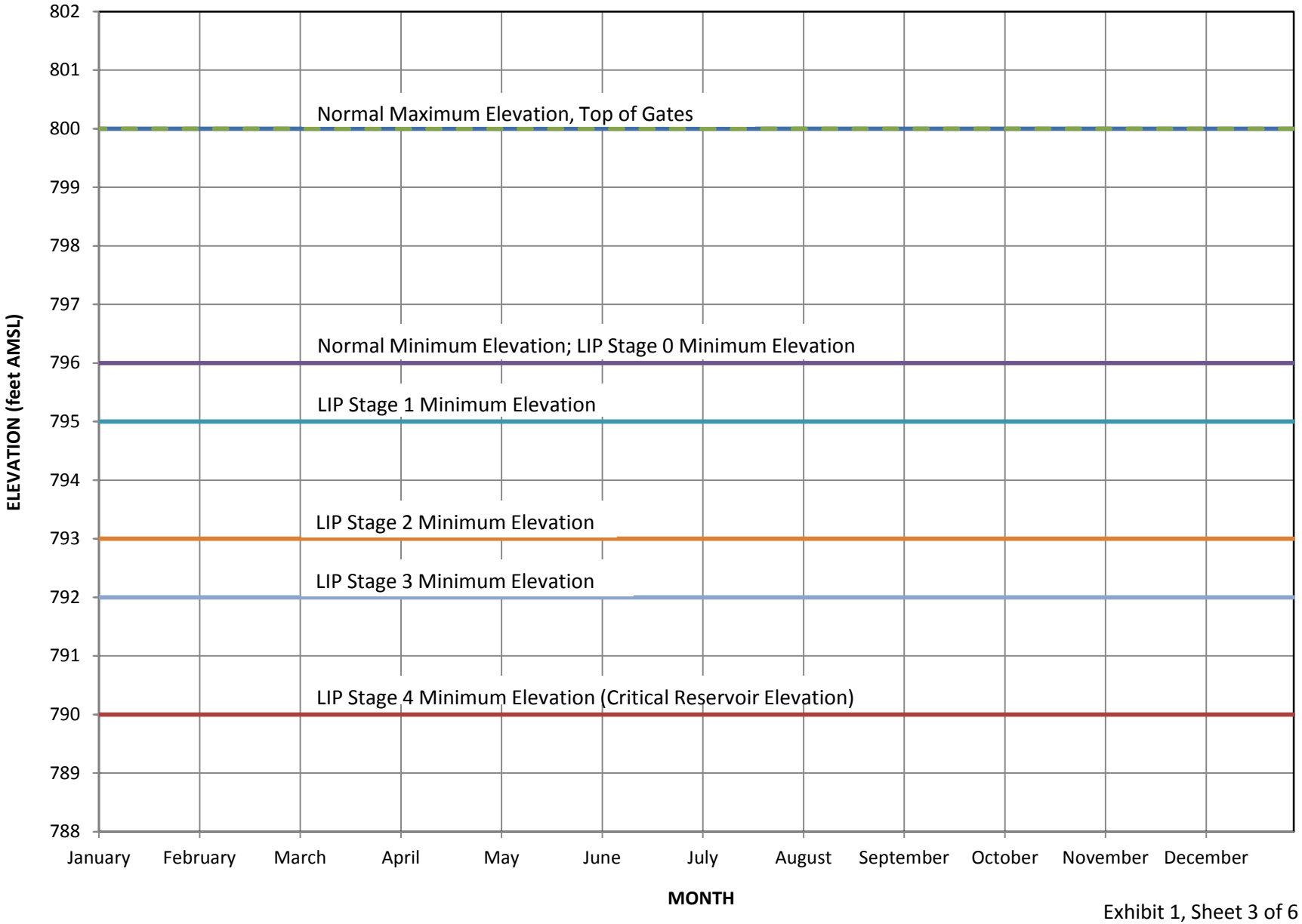


Exhibit 1, Sheet 1 of 6

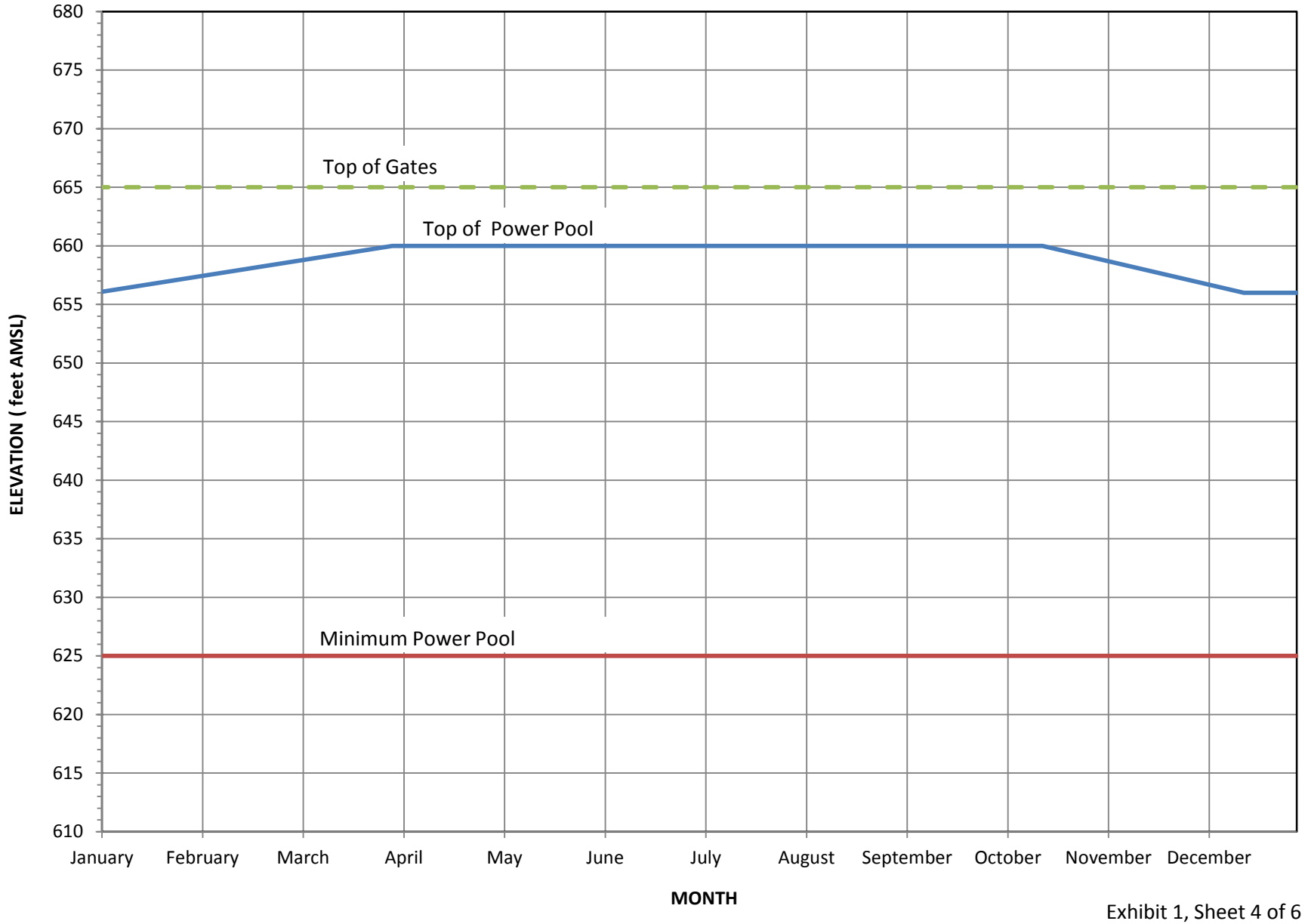
Jocassee Development, Operational Target Curves



Keowee Development, Operational Target Curves



Hartwell Project, Operational Target Curves



Russell Project, Operational Target Curves

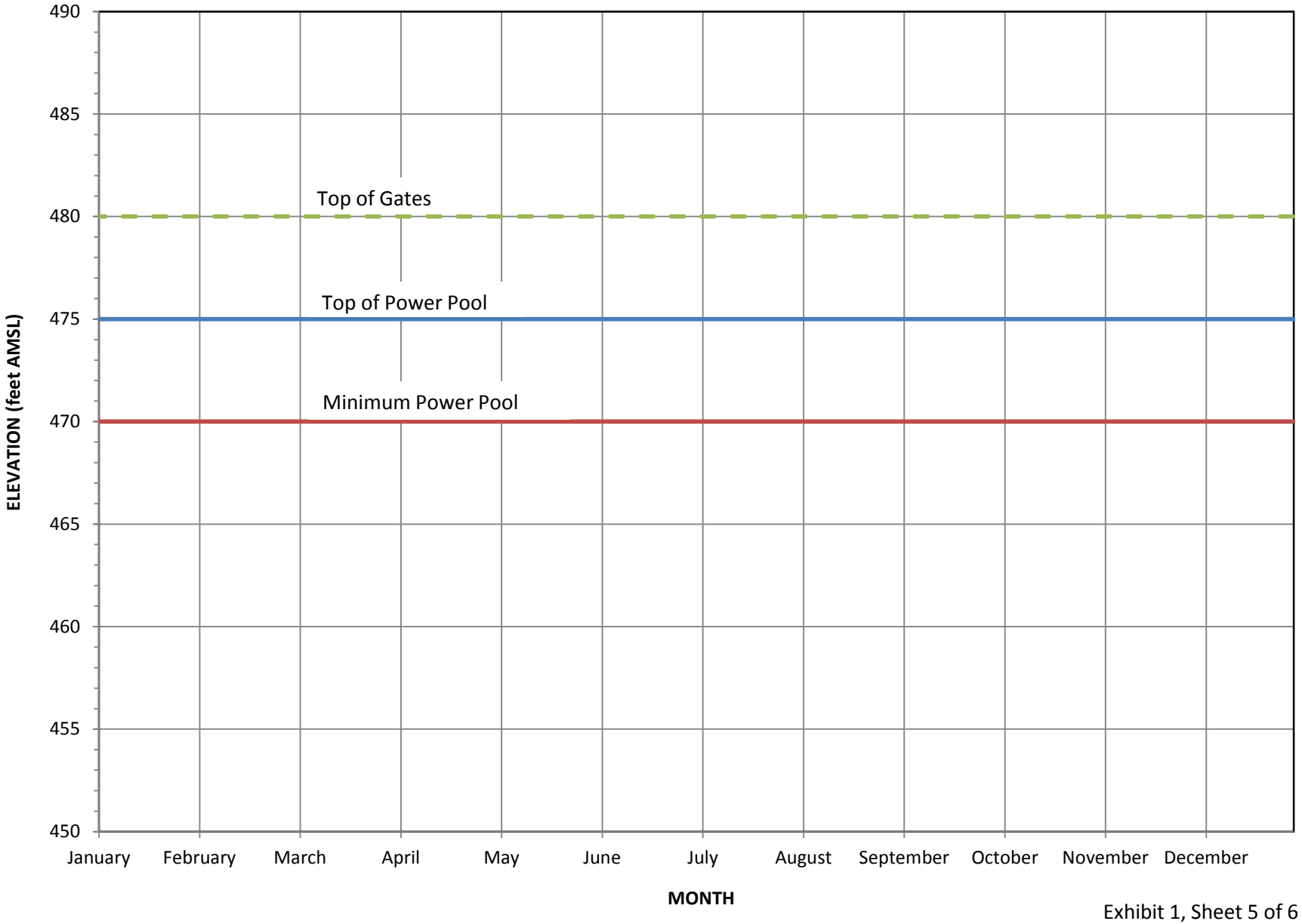


Exhibit 1, Sheet 5 of 6

Thurmond Project, Operational Target Curves

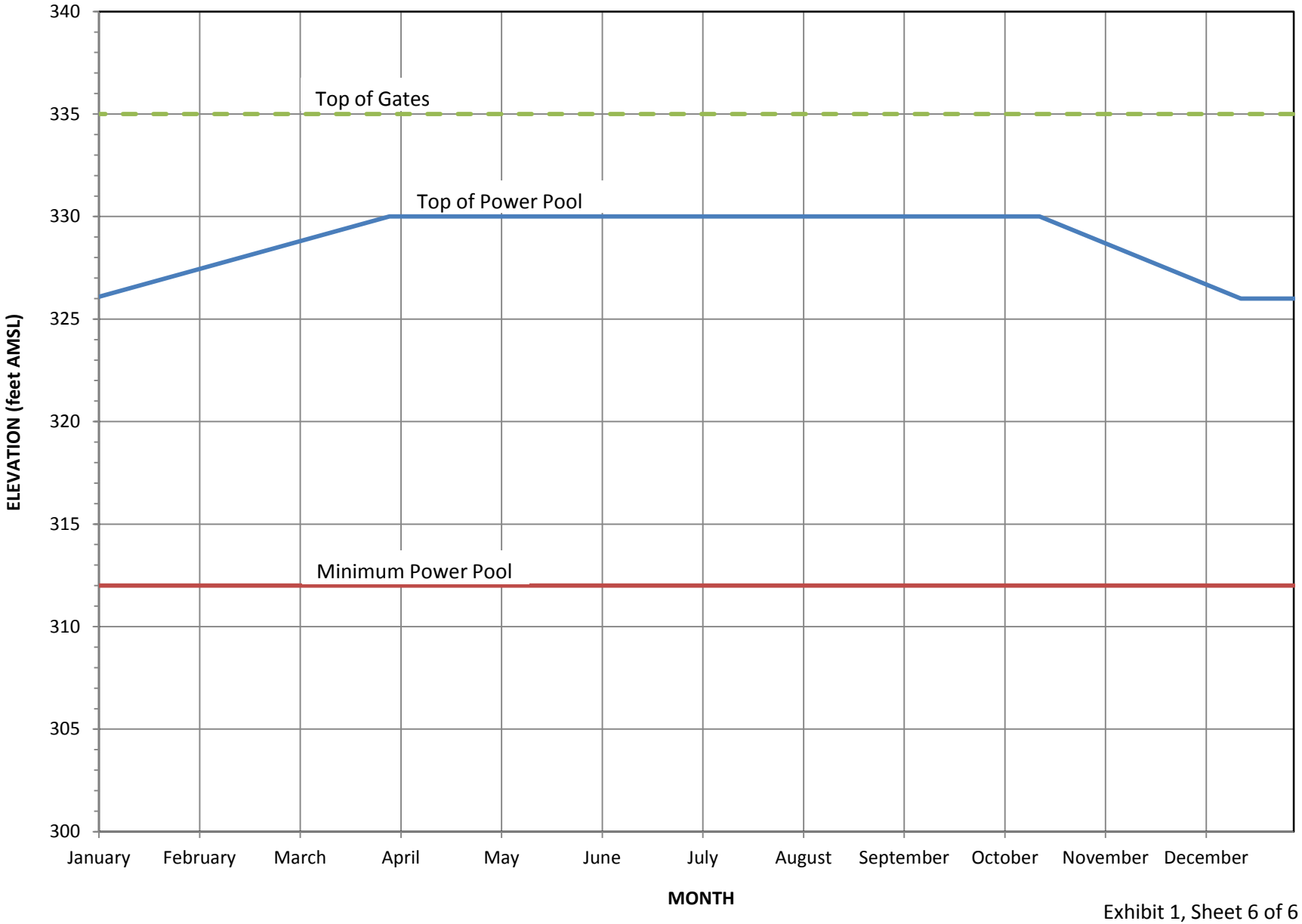


Exhibit 1, Sheet 6 of 6