**GENERATOR INTERCONNECTION**

**MATERIAL MODIFICATION ASSESSMENT**

for integration of the proposed

**150 MW [redacted] PROJECT**
**(IDAHO POWER QUEUE #657)**

to the

**IDAHO POWER COMPANY ELECTRICAL SYSTEM**

in

**ADA COUNTY, IDAHO**

for

[redacted]

**Report v1**

**July 19, 2024**

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# 1.0 INTRODUCTION

On May 31, 2024, [redacted] sent a material modification evaluation request to Idaho Power Company (Transmission Provider) which consisted of a proposal to change the projects BESS specifications from [redacted] Inverters to [redacted] inverters and [redacted] transformers.

The Project location (~ coordinates [redacted]) is in Idaho Power Company's (IPC's) Capital Region in Elmore County, Idaho. The Project is Generation Interconnect (GI) queue number 657 (GI #657). The specific point of interconnection (POI) is the Kuna substation 138kV bus.

A Facility Study Report (FSR), dated September 19, 2023, describes the estimated costs for integration of the Project to the Transmission Provider's transmission system for Network Resource Interconnection Service (NRIS).

This report describes the results of an assessment that was conducted to evaluate the potential impacts of the proposed modification in accordance with the Idaho Power Tariff.

# 2.0 SUMMARY

An assessment was conducted which determined that the modification request is not considered a material modification. The proposed changes do not result in any new reliability concerns, nor do they require new facilities beyond what was already described in the September 19, 2023, FSR. The proposed changes may be incorporated in the Project's Generator Interconnection Agreement (GIA) as an amendment.

# 3.0 DESCRIPTION OF PROPOSED TECHNOLOGICAL CHANGE

The material modification evaluation request consists of changing the BESS system to [redacted] batteries connected to [redacted] Inverters at the 150MW [redacted] project. The BESS is proposed to be AC-connected at 34.5kV and will consist of [redacted] step-up transformer. The step-up transformers will tie into the 34.5kV collector system. The BESS will not be allowed to charge from the grid unless appropriate procedural and contractual arrangements are made.

# 4.0 ASSESSMENT RESULTS

## 4.1 Power Flow Results (Thermal and Voltage Analysis)

A clarification of the first set of models submitted for this MMA was made to ensure the new models were not increasing the project maximum real power output at the POI. The reactive power requirements were still met at the POI. From this it was determined the

modification of the BESS will have no impact on the power flow results already performed in the SIS.

### 4.2 Reactive Power Requirements

The installed reactive power capability of the project must have a power factor operating range of 0.95 leading (supplying) to 0.95 lagging (absorbing) at the POI over the range of real power output (0 MW up to maximum output of 150 MW).

Power flow analysis indicates that with the modification of the proposed BESS, the Project has sufficient reactive power capability to provide a 0.95 leading power factor at the POI (49.3 MVAr) at maximum output of 150 MW based on the data provided by the customer.

Power flow analysis indicates that with the modification of the proposed BESS, the Project has sufficient reactive power capability to provide a 0.95 lagging power factor at the POI (49.3 MVAr) at minimum output of 0 MW based on the data provided by the customer.

### 4.3 Transient Stability Results

Transient stability data provided by the customer for the changes to the [redacted] project was reviewed and deemed usable. A transient stability analysis was performed with the new provided data and the results were acceptable.

### 4.4 Post-Transient Voltage Stability (Reactive Margin) Results

Because there are no changes to the Project's maximum real power output at the POI, and the reactive power requirements are not changed at the POI, the modification of the BESS equipment will have no impact on the voltage stability analysis results already performed in the SIS.

### 4.5 Short Circuit Results

The modification of the BESS inverters will increase the magnitude of the maximum short circuit current contribution from the Project. However, the increase is small enough such that there is adequate short circuit interrupting capability on existing breakers in the area as well as the breakers proposed in the SISR. The modification of the BESS does not necessitate any changes to the required protection systems identified in the SISR.

### 4.6 Other Operating Requirements

GI #657 will be required to control voltage in accordance with a voltage schedule as provided by Idaho Power Load Serving Operations. And GI #657 will be required to install a plant controller for managing the real power output at the project POI.

The project is required to comply with the applicable Voltage and Current Distortion Limits found in IEEE Standard 519-1992 *IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems*.

The Project will be required to reduce output to levels directed by IPC Load Serving Operations during transmission system contingencies and other reliability events. This will be accomplished with a Generator Output Limit Control (GOLC) setpoint sent from IPC to the Project.

## 5.0 CONCLUSIONS

An assessment was conducted which determined that the modification request is not considered a material modification. The proposed changes do not result in any new reliability concerns, nor do they require new facilities beyond what was already described in the September 19, 2023, FSR. The proposed changes may be incorporated in the Project's Generator Interconnection Agreement (GIA) as an amendment.