Dunalastair Dam Floodgate Replacement

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SYNOPSIS Scottish & Southern Energy plc commissioned KGAL Consulting Engineers to carry out the detailed design for the replacement floodgates at Dunalastair Dam, which diverts water into the supply aqueduct for Tummel Power station, part of the Tummel Valley hydroelectric scheme. The major challenges to the replacement of the vertical lift bow string girder roller gates were the combination of remote location, the lack of any existing stoplog system to isolate the gates and the requirement to utilise the existing civil structure and counterweights to operate the replacement gates. The floodgates were exactly as originally installed at the time the scheme was first constructed.

The mechanical contractor, Enterprise Engineering Services Ltd of Aberdeen, participated in the early site discussions with both KGAL and SSE. Key issues such as stoplog and stoplog guide handling and installation and the removal and replacement of the gates were therefore agreed prior to the commencement of the design works. Removable stoplog guides, stoplogs and a multi-part replacement gate were subsequently designed. In addition, permanent dedicated lifting equipment for the deployment of the stoplogs, guides and gate was also designed. All of the equipment was finally installed on site and successfully commissioned.