

Justification for the proposed WECC Interconnection-Wide Variance to PRC-006-1

Background

In the aftermath of system-wide disturbances occurring within the Western Interconnection on July 2 and 3 and August 10, 1996, President Clinton appointed a “Blue Ribbon” panel to perform a comprehensive assessment of these disturbances and make recommendations to enhance reliability within the Western Interconnection. The investigations culminated in two reports: the “WSCC Disturbance Report for the Power System Outages that Occurred on the Western Interconnection on July 2, 1996 and July 3, 1996,” and “WSCC Disturbance Report for the Power System Outage that Occurred on the Western Interconnection on August 10, 1996” (Disturbance Reports). The Disturbance Reports’ recommendations identified several reliability issues for further investigation. One of these issues was the efficacy of existing policies and procedures related to off-nominal frequency (underfrequency load shedding (UFLS) programs), the purposes of which are to arrest potential system collapses due to large frequency deviations, minimize associated adverse impacts caused by cascading outages, and aid in quickly restoring the system to normal operations.

Status

The Western Electricity Coordinating Council (WECC) Planning Coordination Committee (PCC) and the Operating Committee (OC) developed a coordinated off-nominal frequency load shedding and restoration plan for the Western Interconnection in the fall of 1997 (1997 Coordinated Plan). The WECC Board of Trustees approved the 1997 Coordinated Plan on December 4, 1997.

In 2009, the WECC PCC and OC formed a task force to review the effectiveness of the existing protection relays associated with the 1997 Coordinated Plan. The results indicated that WECC members’ relay settings conform to the 1997 Coordinated Plan performance requirements, both in arresting frequency decline before frequency reaches 58.0 Hz and in recovering frequency to 59.5 Hz or higher. These results also indicated that UFLS relays will not activate until there has been a cascading disturbance across multiple entities’ systems. In addition, none of the Western Interconnection’s sub-areas will experience an off-nominal frequency event due to either single or dual most severe contingency losses of generation resources if the losses occur within known island configurations.

The members of the WECC recognize the need for a common plan for underfrequency load shedding. The members of the WECC have agreed to follow and operate their systems in accordance with the Coordinated Plan as an essential element of a well-planned and operated Western Interconnection electric system.

WECC believes it is necessary to maintain the reliability benefits of the WECC Coordinated Plan as NERC moves forward with the revision to PRC-006. The language in the proposed variance is intended to ensure that the Planning Coordinators in the Western Interconnection continue to implement the WECC Coordinated Plan rather than developing new UFLS Plans that are not fully coordinated with the WECC Coordinated Plan. The variance language requires this coordination, while still requiring the individual Planning Coordinators to meet the system performance levels identified in the NERC Continent-wide Reliability Standard.