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**Assessment of DERMS Deployment Under Various Operating Conditions**

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Abstract :

San Diego Gas & Electric conducted a demonstration of various DERMS use cases under the California Electric Program Investment Charge (EPIC -1) project for Distributed Control for Smart Grid. The demonstration consisted of two SDG&E substations and feeders with optimization through control of LTCs, Voltage regulators, capacitors, switches and DERs. The DERS were three 1-2MW PV inverters with two 2MW energy storage units, each operating with injection into the grid.

Use cases were used to demonstrate quiescent and stress operating behavior including failure modes, low and high DER injection modes, low and high load conditions, and the transition performance between use cases. Three classical control technologies were tested under identical conditions. The presentation will compare and summarize the findings, benefits and recommendations related to DERMS installations.