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Source to Tap: Virtual Management of a Water Delivery System

Shahram Khosrowpanah et al.
University of Guam

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SOURCE TO TAP: VIRTUAL MANAGEMENT OF A WATER DELIVERY SYSTEM

Shahram Khosrowpanah, Professor of water resources engineering, University of Guam/WERI, UOG Satation, Mangilao, Guam 96923, khosrow@uog.edu, 1-671-735-2694 **Leroy Heitz**, Prof. Water Resources Eng., University of Guam/WERI, UOG Station, Mangilao, Guam 96923, lheitz@uog.edu, 1-671-735-2691
Ernie Villarin, engineer at Commonwealth Utility Corporation, Saipan, CNMI
Mariano Iglecias, system operator at Commonwealth Utility Corporation, Saipan, CNMI

A healthy water system that can perform its essential functions requires a good record of system component location and connectivity, an in-depth understanding of system hydraulics, and a coordinated operation and maintenance program. In Saipan, Commonwealth of the Northern Marians Island (CNMI) large investments have been made in system improvements, but delivery problems still persists. A stated goal of the CNMI government is to provide 24-hour water to all residents served by the Commonwealth Utility Corporation (CUC) water system. This goal will be unattainable until the CUC has complete knowledge of the water delivery capabilities and operational characteristics of its water delivery system.

With financial support from the CUC, and the US Geological Survey (USGS) Water Institute Program, research engineers at WERI and CUC Water division personnel are working to develop a water system operating plan with the goal of providing 24-hours water services through out the island. The plan includes: 1) development of a hydraulic model of the entire distribution system, 2) training personnel on how to operate the system model, and 3) skeletonization of the water distribution system to explore various operational scenarios.

This paper will be present an overview of the present CUC water system operation, system goals, model development, a review of the training program accomplished to date, and details on how the hydraulic model is being used for water system management. A live demonstration will be made on exploring operational scenarios for one of Saipan's water delivery sub-systems.

Contact: Shahram Khosrowpanah, University of Guam, Water & Env. Research Institute of the Western Pacific (WERI), khosrow@uog.edu, University of Guam/WERI, UOG Station, Mangilao, Guam 96923, 1-671-735-2694, 1-671-734-8890