

Standard Operating Guideline – Canal Structure Operation & Maintenance

Standard Operating Guideline (SOG)

Title: **CANAL STRUCTURE OPERATION AND MAINTENANCE**

District Name: _____

Date Prepared: _____ Date Revised: _____

OBJECTIVE:

- Ensuring effective system-wide preventive and predictive maintenance actions
- Ensure periodic task accomplishment
- Identify potential/actual system problems
- Maintain optimum water flow/service to water customers

RATIONALE / PURPOSE:

- Ensure mission capability
- Ensure system reliability
- Develop predictive maintenance programs
- Determine capital improvement budgeting
- Develop loss trend analysis
- Reduce property, liability, and injury/illness loss exposures
- Reduce revenue loss

METHODS / PROCEDURES:

(Note: Listed procedures are intended as guidelines only, and may not be applicable for all Districts or situations).

Construction:

- Design should be done by qualified engineers in conjunction with facility operators.

Preventive Maintenance Procedures:

- Regularly inspect canals and levee structures during water run and when dry. Inspect for signs of undermining of structures.
- Do complete inspection at end of season, and set priorities for maintenance before next water season.
- Operate and maintain valves and gates regularly to allow ease of operation.

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- Cover valve stem threads to keep clean. Use clear plastic tubing over stems (or painted PVC, with indicator rod on gate blade) to allow observation of valve position.
- Inspect, service, and remove debris from traveling screens to maintain functionality and maximum water flow.

Operation:

- Properly store weir boards for easy access.
- Regularly remove debris from screens to prevent damage and maintain maximum water flow.

SCADA System Maintenance:

- Test all SCADA phone lines.
- Test dial-up paging and alarming, including back-up paging systems.
- Check radio signal quality functions.
- Review alarm summaries for potential system problems.
- Check instrumentation function and calibration.
- Inspect and check U.P.S and battery function and status.

INCIDENT RESPONSE: See Canal Failure Response SOG

SAFETY CONSIDERATIONS:

An effective maintenance program can help prevent damage to property, environment, and injury to the public and employees by:

- Preclude system and equipment damage
- Preclude property and environmental damage
- Facilitate operations & maintenance personnel safety
 - o Identify safe work practices
 - Traffic control
 - Fall protection
 - o Train employees and document

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COST/ BENEFIT:

- Reduce revenue losses.
- Preventive maintenance and loss trend data would reduce facility, equipment, and system failures.
- Avoid costly liability, property, and injury/illness losses.
- Create a manageable capital improvement budget to support effective O&M practices.

INSPECTION FORMS / CHECKLISTS / DOCUMENTATION:

(Refer to Section 3 of the Best Practices web page for Canal Structure O&M).

- Training Log
- Canal Bank/Levee Inspection Form
- Accident/Incident Investigation Form
- LEAK/BREAK/DAMAGE Checklist

REFERENCES:

- U.S. Army Corps of Engineers, Levee Owner's Manual for Non Federal Flood Control Works, March 2006, Section 2.6.