

State and Federal Government EOR Positions & Initiatives

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Government EOR Positions

Presentation Outline

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- Limited Review
- State Programs Requiring PE Certification
- Montana EOR Requirements for TSF
- Federal Programs Requiring PE Certification
- MSHA
- OSMRE
- USEPA
- Observations

Government EOR Positions

Limited Review

Limited Review

- ASDSO Initiative and 2016 Tailings Dam Survey
- cursory review of selected state programs: PA, OH, WV, VA, KY, IL, MT, CO, AZ, NV, WY, NM
- Montana Program
- Review of federal agency programs
- Review of 2016 Dam Safety Program Report (FEMA)
- Contact with MSHA & OSMRE

ASDSO Tailings Dam Survey

ASDSO conducted a tailings dam survey of member states in 2016:

- 26 states responded, with most respondents reporting tailings dams within their state
- Most state dam safety programs have jurisdiction over TSFs that meet their size or hazard criteria (LA, OH, and VA report that tailings dams are not regulated under their dam safety program; other agencies in OH and VA have jurisdiction)
- Many states (14 of 20 respondents) require identification of Engineer of Record (EOR), and nearly half (9 of 20 respondents) report qualifications requirements
- Many states (half to a little more than half of respondents) require: Operation and Maintenance Plans; TSF Management Plans or Dam Safety Plans; and Annual Reports

ASDSO Paper on Engr. Cert.

ASDSO 2012 White Paper on Engineering Certification

- Use of the term certification for construction documents, permits, inspections, plans, and reports
- Problem with the use of the term – can be misconstrued or relied upon as an absolute guarantee
- Alternative to address the issue: delete, or replace; or define the term to mean the statement of professional opinion which excludes guarantees or warranties
- State representatives made aware of problem, and encouraged to address issue at the state level

Government EOR Positions

State Programs

State Programs are implemented by dam safety agencies, mine permitting agencies, and environmental protection agencies (**agency without jurisdiction for tailings dams**)

State	Dam Safety Agency	Other Agencies
PA	PADEP Bur. Of Waterways Engr.	DEP Bur. Of District Mining Operations
OH	ODNR Div. of Water	ODNR Div. of Minerals, OEPA
WV	DEP Div. of Water & Waste Management	
VA	Dept. of Conservation & Recreation	Dept. of Mines, Minerals, & Energy
KY	DEP Div. of Water	DNR Div. of Mine Reclamation & Enforcement
IL	DNR Div. of Water	Div. Of Mine Land Reclamation; IEPA

Government EOR Positions

State Programs

State Programs are implemented by dam safety agencies, mine permitting agencies, and environmental protection agencies

State	Dam Safety Agency	Other Agencies
MT	DNRC Div. of Water	DEQ Hard Rock Bureau
WY	State Engineer's Office	DEQ
NV	Div. Of Water Resources	Div. Of Environmental Protection; BMRR; BWPC
CO	DNR Div. of Water Resources	Div. Of Reclamation, Mining, & Safety
NM	Bureau of Dam Safety, OSE	NM Mining & Minerals Div.; NM Environment Dept.
AZ	Department of Water Resources	Department of Environmental Quality

Government EOR Positions

State Programs

State Dam Safety Programs Typically Require:

- Design certification by a PE
- Designation of EOR during construction
- EOR certification of construction
- Inspection (annual to 5-year) by a PE
- Repair or design modification plan certification

State Mining Agency Programs Typically Require:

- Design certification by a PE
- PE certification of construction
- Repair or design modification plan certification

Government EOR Positions

Montana Initiative

- Montana DNRC share regulation of tailings dams with DEQ Hard Rock Mining bureau. Tailings dams associated with mine operating permits are regulated by DEQ, and tailings dams associated with inactive mines are regulated by DNRC. The two agencies work closely together.
- In 2015, Montana SB 409 was enacted, introducing EOR and independent reviews into the MCA for metal mine regulation, Title 82 Minerals, Oil & Gas (82-4-301;381). This was the result of an initiative by the Montana Mining Association in response to the tailings pond breach at Mt. Polley Mine in 2014.

Government EOR Positions

Montana

EOR Highlights (82-4-375)

- Written designation of EOR with contact information for existing facilities, and new or amended permit application
- EOR may not be an employee or an operator or permit applicant, and may not be on independent review panel
- Duties:
 - Prepare designs and other document submittals
 - Address recommendations of the independent review panel
 - Certify and seal designs and other document submittals (Operation, Maintenance, and Surveillance Manual; Emergency Preparedness and Response Plan)
 - Complete annual inspection and reports
 - Notify operator when credible evidence indicates the TSF is not performing as intended, and DEQ if the TSF presents an imminent threat to human health or the environment

Government EOR Positions

Montana

EOR Highlights (82-4-375)

- EOR, TSF operator, or permit applicant must notify the DEQ if there is a change in the EOR
- If the TSF operator or permit applicant does not designate an EOR or replace an EOR within 90 days of receipt of notification that the engineer is no longer the EOR, the DEQ shall order suspension of the deposition of tailings until an EOR is established

Government EOR Positions

Montana

EOR Definition (82-4-303)

- EOR is the qualified engineer who is the lead designer for the TSF
- Qualified engineer is a professional engineer who has a minimum of 10 years of direct experience with the design and construction of tailings storage facilities and has the appropriate professional and educational credentials to effectively determine appropriate parameters for the safe design, construction, operation, and closure of a TSF

Government EOR Positions

Montana

TSF Design (82-4-376) and Quality Assurance (82-4-378)

- Certification by EOR
- Contains standard site exploration, testing and design information, as well as:
 - Construction management plan that includes qualifications of the oversight personnel and the role of the independent review panel (with panel concurrence)
 - Requirements for post-closure monitoring, including frequency of EOR inspections and independent review panel reviews, and EOR retention
- When indicated by the construction management plan, a QA professional engineer must be engaged who is an employee of the EOR (or EOR's firm), and certify the QA monitoring records

Government EOR Positions

Montana

TSF Independent Review Panel (82-4-377)

- 3 member panel designated by the operator and approved by the DEQ
- Panel member cannot be an employee of operator, designer/ EOR, or constructor
- EOR shall participate in the panel review
- Representatives of the DEQ and operator may participate, but they are not members of the panel and their participation is nonbinding on the review
- In addition to review of the design document, the panel shall assess the practical application of current technology in the proposed design
- The panel's report shall be submitted to the operator and the DEQ
- The EOR shall modify the design to address the recommendations of the panel, and certify the design document and submit it to the DEQ

Government EOR Positions Montana

TSF Independent Review Panel (82-4-377)

Periodic inspection reviews (at least once every 5 years during mining) shall be conducted by the independent review panel that include EOR inspection reports, corrective action plans, Operation, Maintenance and Surveillance Manual and other records.

For an expansion of a TSF, the operator shall make a reasonable effort to retain the original design independent review panel members

Government EOR Positions

Montana

TSF Annual Inspections (82-4-381)

- EOR shall perform annual inspections during operation or as required during closure, prepare a report including operation and maintenance recommendations, and submit the report to the operator and DEQ
- Operator shall prepare and submit corrective action plan and schedule to implement the inspection recommendations to the EOR for verification
- Operator shall submit the corrective action plan and schedule, verified by the EOR, to the DEQ within 120 days following the date of the inspection
- Operator shall implement the corrective action plan pursuant to the schedule

Government EOR Positions

Federal Government

The following federal agencies have regulatory jurisdiction or ownership over tailings dams or ash impoundments, and address EOR requirements (not a complete list):

- Mine Safety & Health Administration
- Office of Surface Mining Enforcement and Reclamation Enforcement
- Nuclear Regulatory Commission
- Environmental Protection Agency
- Bureau of Land Management

Government EOR Positions

MSHA

MSHA requirements for metal and non-metal mines (30CFR 56.20010; 57.2010):

- If failure of a water or silt retaining dam will create a hazard, it shall be of substantial construction and inspected at regular intervals.

MSHA requirement for coal mines (30CFR 77.216):

- Have a registered professional engineer certify the dam's design;
- Develop plans for the design, construction, maintenance, and abandonment of the dam and have the plans approved by MSHA;
- Have a qualified person inspect the dam weekly;
- Have instrumentation monitored weekly;
- Correct hazardous conditions and make required notifications;
- Submit an annual report with a registered, professional engineer's certification that construction, operation, and maintenance of the dam have been in accordance with approved plans.

Government EOR Positions

MSHA

MSHA recognizes the FEMA Federal Guidelines for Dam Safety (<https://www.fema.gov/federal-guidelines-dam-safety>) recommending that all dams:

- Be designed by a competent engineer;
- Be constructed under the general supervision of a competent engineer knowledgeable about dam construction;
- Be inspected and monitored at frequent intervals by a person trained to recognize unusual conditions; be inspected by a competent engineer with knowledge of dam safety at a frequency consistent with the dam's hazard potential;
- Have an emergency action plan, if dams are classified as having high or significant hazard potential in the event of failure

Government EOR Positions

MSHA Initiative

As part of considering dam safety program improvements, MSHA requested information in 2010 in an Advance Notice of Proposed Rulemaking to identify dam safety practices in the metal and non-metal industry:

- Design & construction review requirements and verification
- Operation & maintenance inspection (routine by qualified person, and detailed inspections by PE)
- Closure & abandonment verification
- Qualifications of design engineer, supervising engineer for construction, and personnel who perform detailed inspections

MSHA gathered input, but has not proposed rulemaking to amend the current requirements for dams and impoundments at metal and non-metal mines.

Government EOR Positions

OSMRE

OSM through a nationwide regulatory program (Surface Mining Control and Regulation Act) ensures that coal mining activities are being conducted in a manner that protects citizens and the environment, restores the land to beneficial use after mining, and mitigates the effects of past mining on abandoned mine lands.

States either adopt programs that meet OSM requirements, or OSM directly regulates coal mining activities (12 states). OSM also directly regulates coal mining on federal lands (cooperative agreements with state agencies, or directly) and on Indian lands.

- Among the 12 states, only TN and VA have active coal mining or pending permits

Government EOR Positions

OSMRE Initiative

OSM requirements that involve engineering review or certification (30CFR780, 784, 816, 817):

- Technical review
- Inspections (for dams that are not captured in MSHA inspection requirements, OSM requires quarterly inspection depending on size and hazard potential)
- Annual recertification requirement by PE that impoundment has been constructed and maintained in accordance with the approved plan

OSM initiated proposed federal rules to require Emergency Action Plans (EAPs) be developed and submitted to regulatory authority for all significant and high hazard potential SMCRA dams within 6 months of publishing of the rule (originally expect to be in 2017).

OSM has also contemplated a proposed rule for bond release that includes liquefaction analysis and proof of stability.

Government EOR Positions

USEPA

The USEPA adopted final Coal Combustion Residuals (CCR) impoundment rules (40CFR257) requiring the following

- Inspections (weekly, instrumentation monthly) by qualified person; annual inspection and certification by qualified PE to ensure that the design, construction, operation and maintenance is consistent with recognized and generally accepted good engineering practice
- Certifications by a Qualified PE (licensed PE, qualified by education, technical knowledge and experience to make the specific technical certifications requested) for the following:
 - Location restrictions
 - Liner system (design and construction)
 - Structural integrity and hazard potential classification
 - Emergency Action Plan
 - Fugitive dust control
 - Run-on and run-off control system and design flood requirements
 - Ground water monitoring system, statistical analysis, corrective action, assessment monitoring
 - Closure plan and cover system (design and construction)
 - Post-closure plan

Government EOR Positions Observations

State & Federal Permit Programs Typically Require:

- Design certification by a PE
- Designation of EOR during construction
- EOR certification of construction
- Inspection (annual to 5-year) by a PE

These programs generally include requirements for: design report, plans & specifications, operation and maintenance manual, emergency action plan, inspections and reporting.

The EOR qualifications are generally limited to licensed PE; some programs cite experience in the type of dam and specific knowledge/experience for certain submittals.

Government EOR Positions Observations

Montana's program for TSFs at metal mines provides more definition of EOR responsibilities and qualifications, and includes independent review panel requirement and interaction.

MSHA continues to be interested in metal and non-metal impoundment regulation, which would likely mirror the coal mining regulatory program.

USEPA's involvement in CCR include more definition to EOR qualifications and certification.

Government EOR Positions Questions?