

Review of Pre-Workshop Survey Results & Discussion

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Pre-Workshop Survey

Pre-Workshop Survey on the Engineer of Record (EOR) role for Tailings Storage Facilities (TSFs) was developed to:

- Obtain information on the current state of practice
- Identify concerns within the engineering community
- Receive opinions regarding EOR issues

TSF should be considered a mine or mineral processing tailings dam and impoundment, or a coal combustion residuals or coal refuse impoundment. EoR services include formal designation as the Engineer of Record, as well as situations where an engineer's certification of the design and/or construction are required.

Pre-Workshop Survey

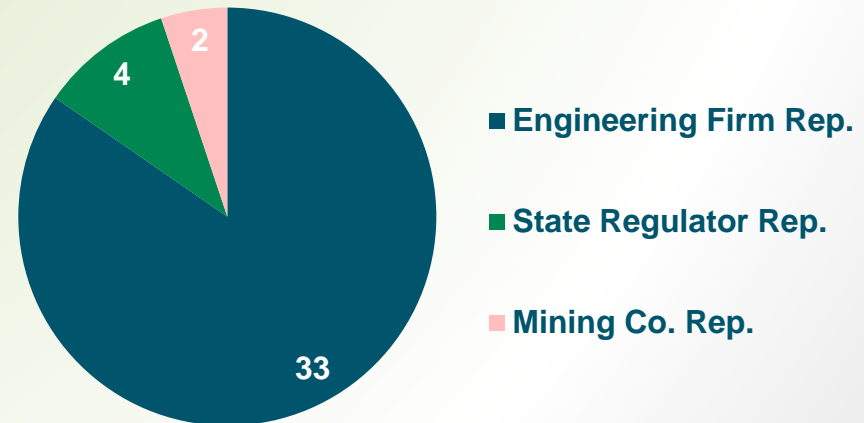
The survey was developed by members of the Geoprofessional Business Association (GBA) Tailings EoR Task Force, with input from the US Society on Dams (USSD) Committee on Tailings Dams for use and presentation at GBA's Tailings EoR Workshop on January 26, 2017. GBA administered the survey and provided compiled results for this presentation. The following slides present a summary of the results for many of the questions.

Pre-Workshop Survey

Survey Response

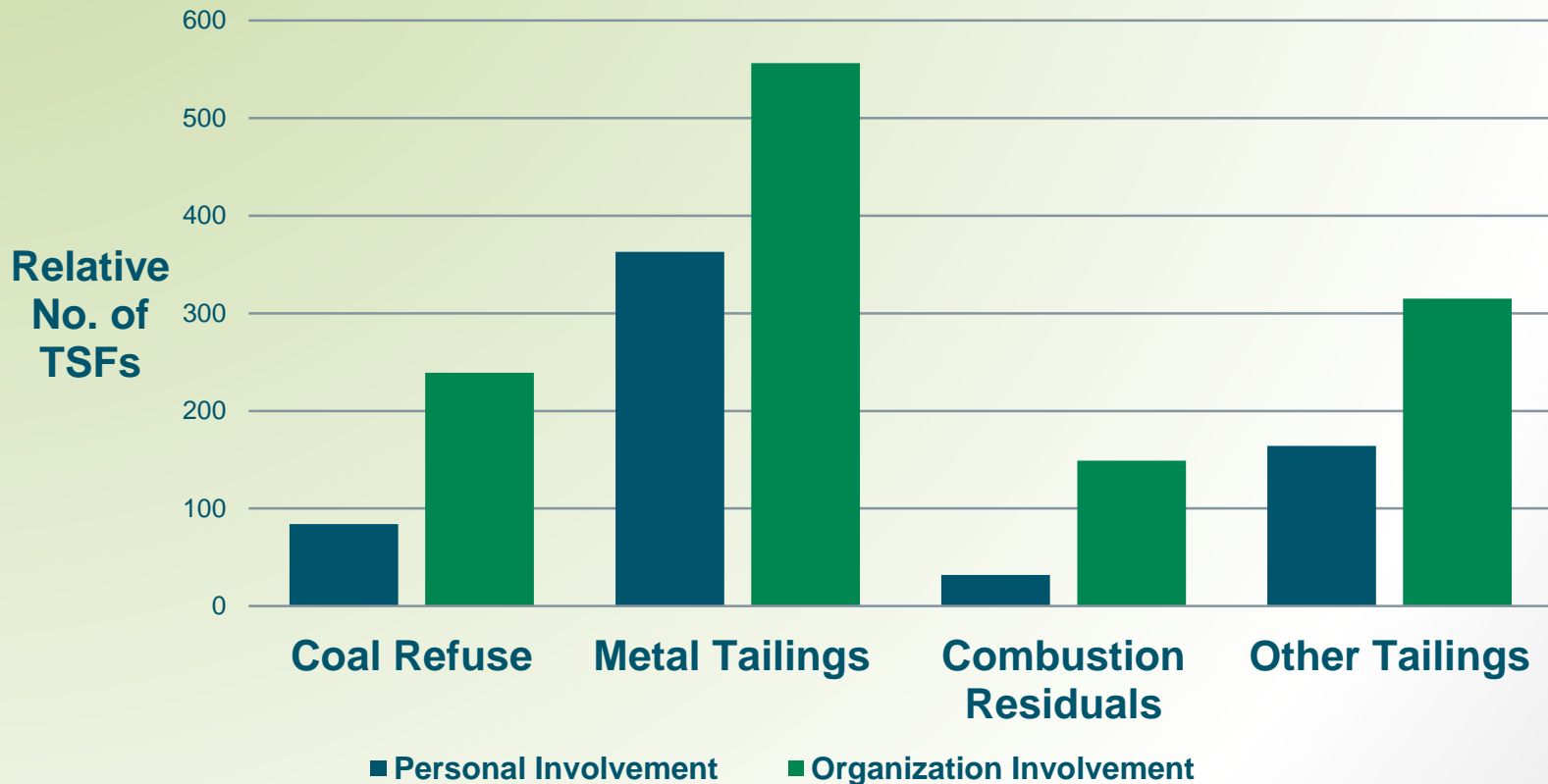
- Period: Jan. 9-24, 2017
- 45 Responses Received
- 21 Engineering Firms
- 2 State Regulatory Agencies
- 2 Mining Companies

Repondents



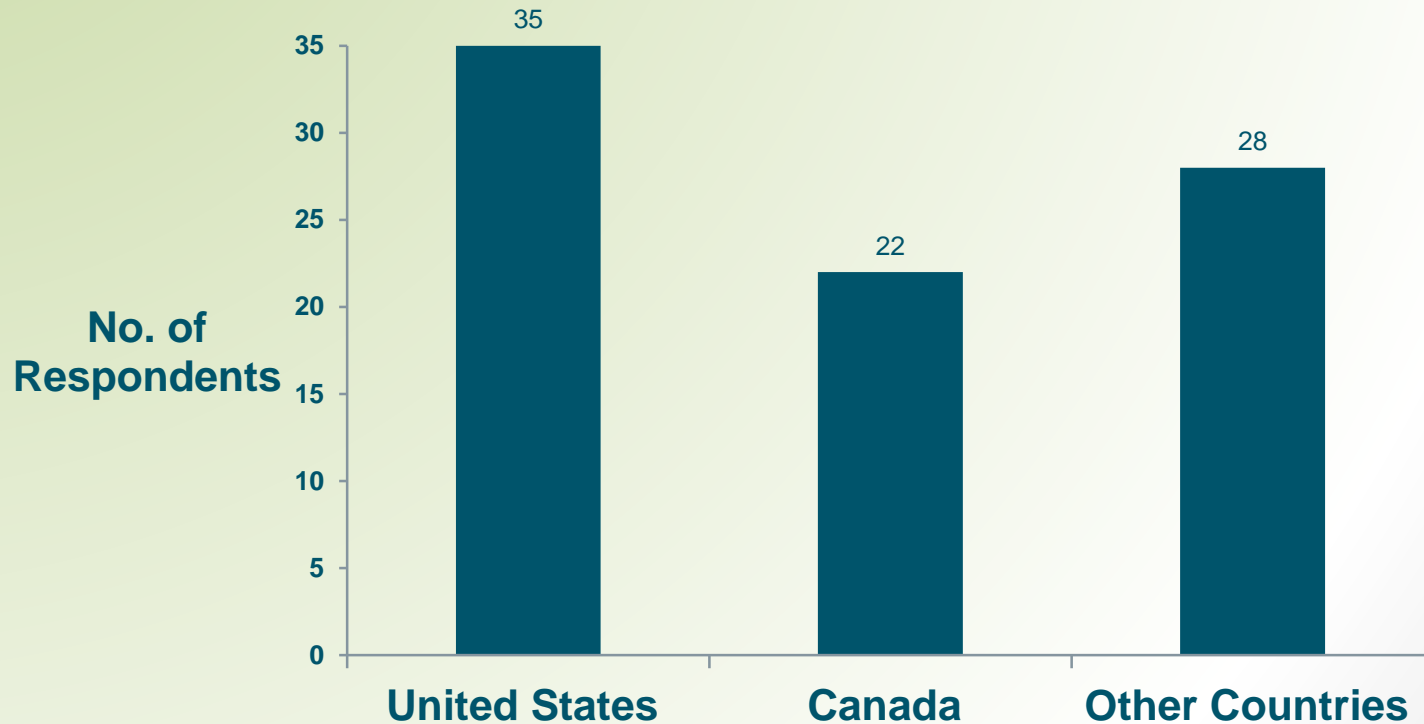
Pre-Workshop Survey

Background on Respondents Involvement with TSFs in last 5 years (3 & 4)



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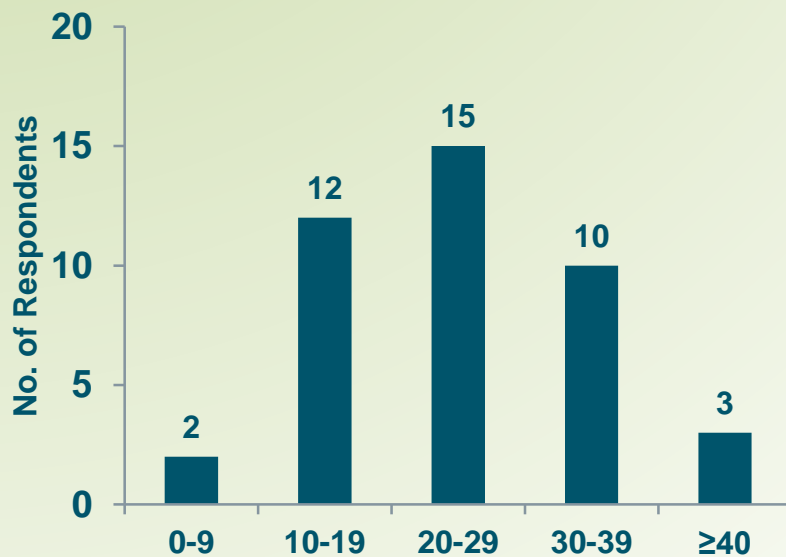
Respondents Geographic Distribution of Practices (5)



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Respondents Years of Experience (6 & 7)

Years of Professional Experience

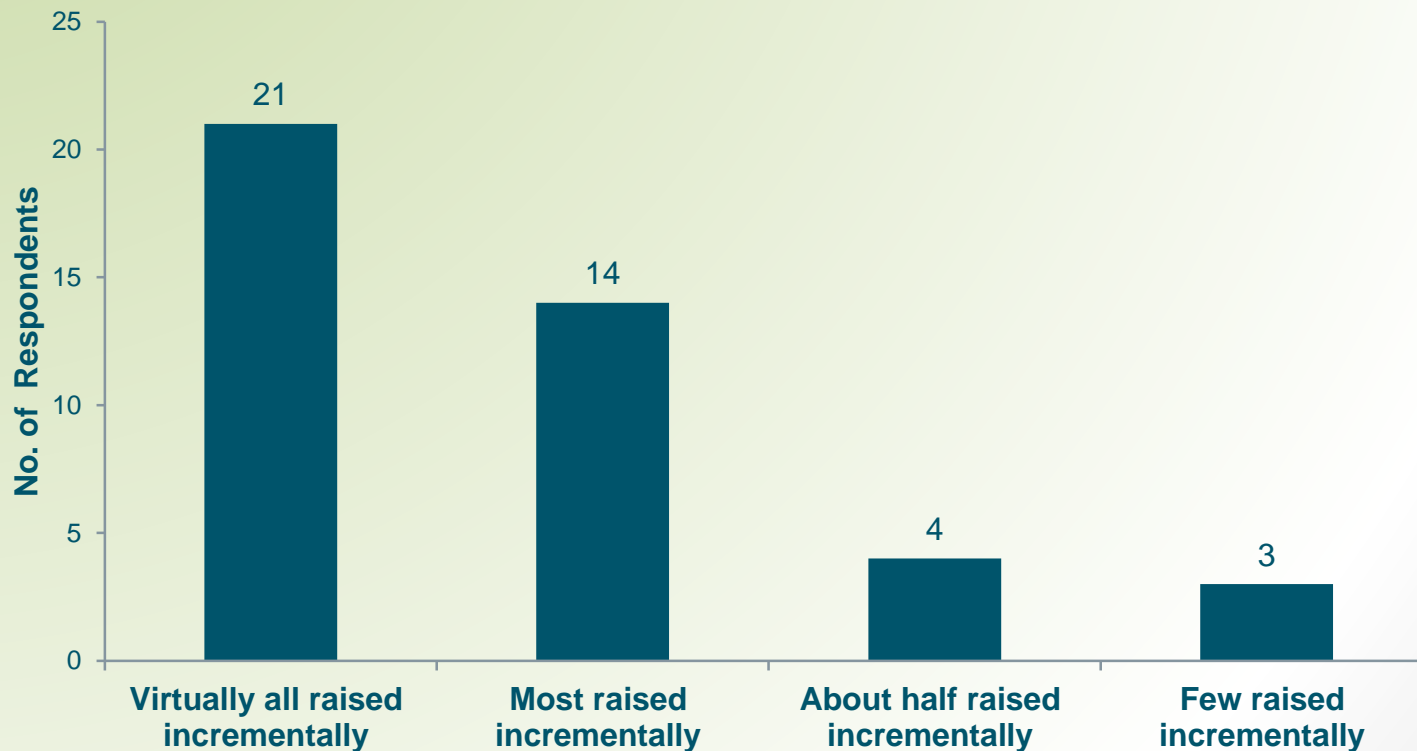


Years of TSF Experience



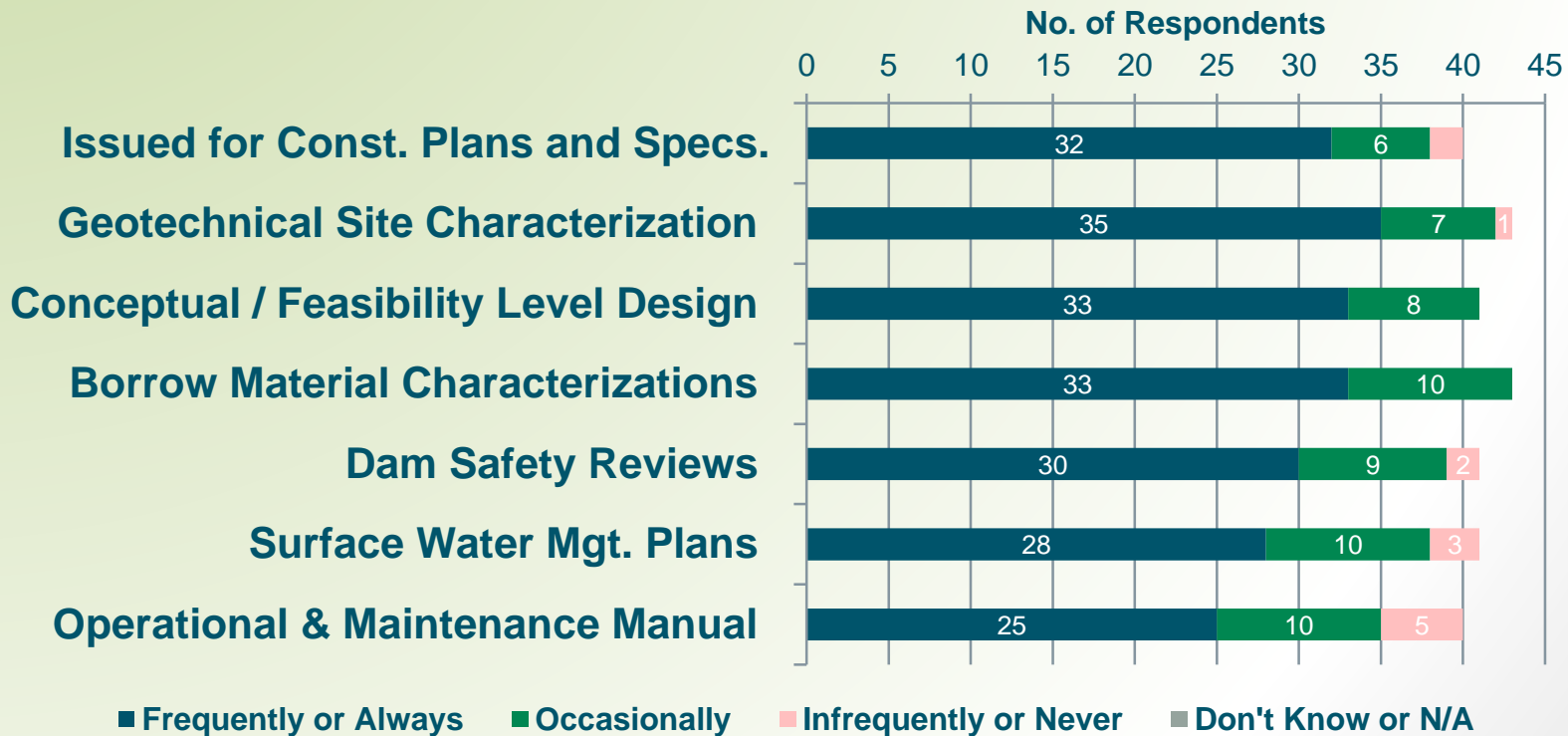
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Relative Proportion of TSF that are Incrementally Expanded over long period (9)



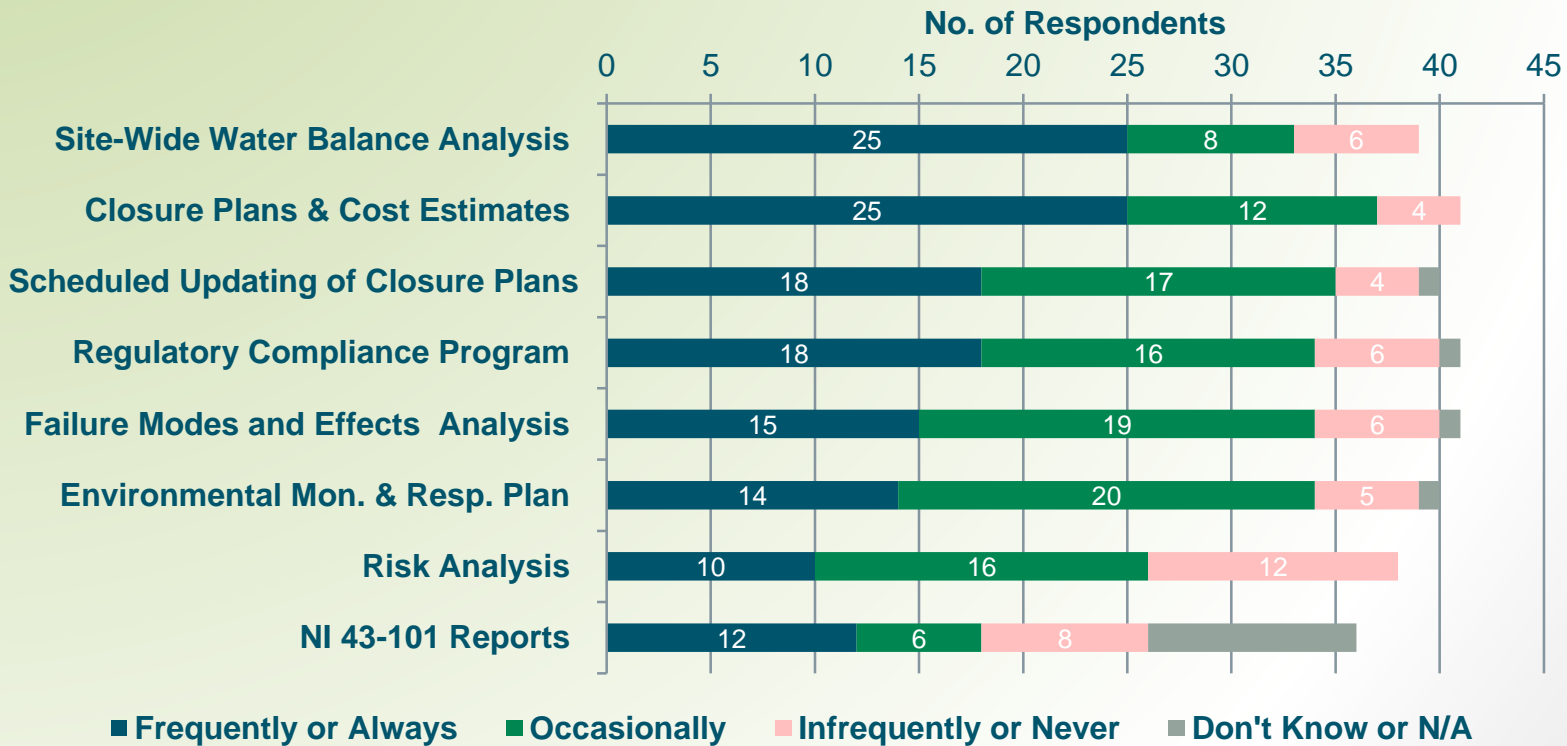
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TSF Elements Incorporated into Projects requiring EOR services (1 of 2) (12)



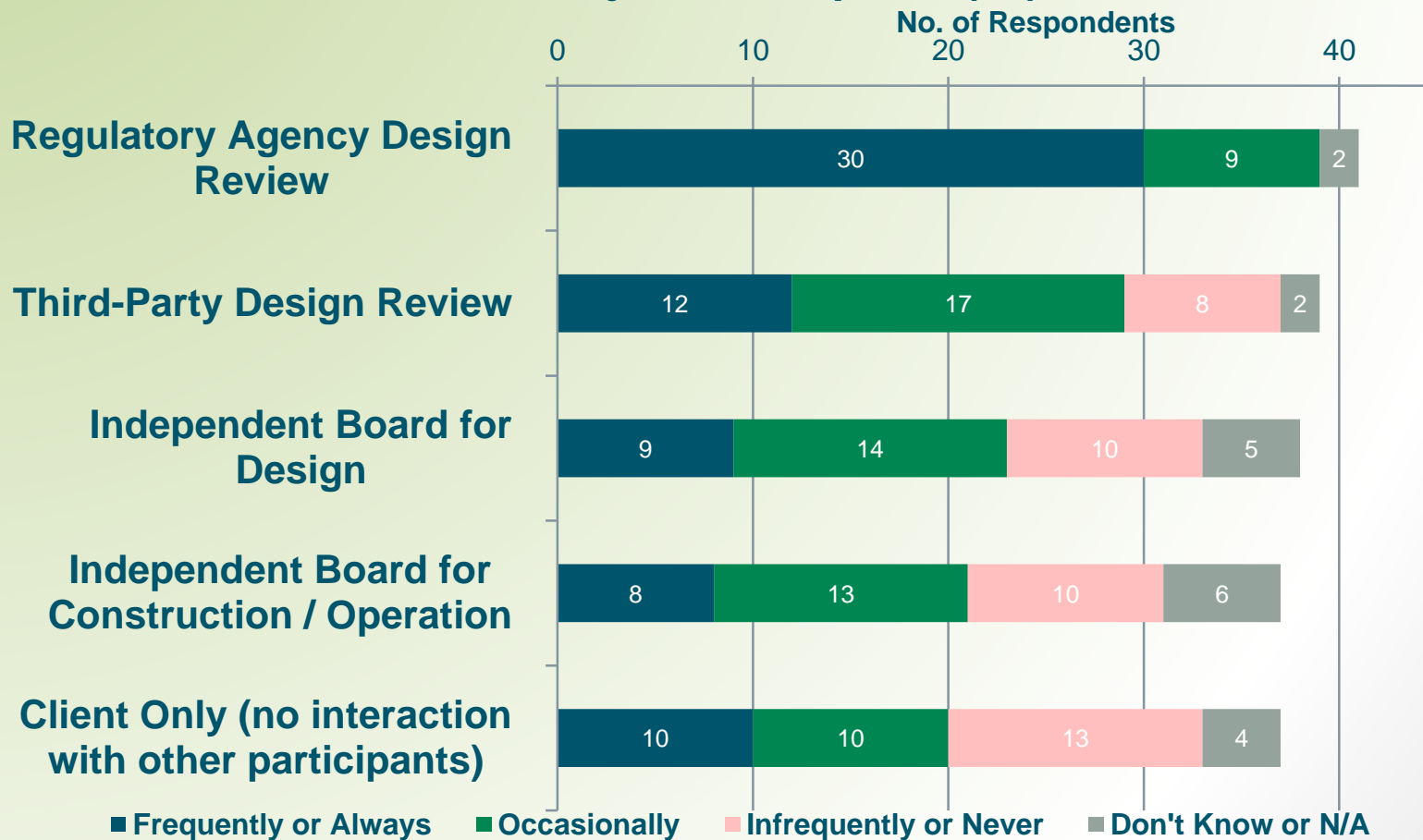
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TSF Elements Incorporated into Projects requiring EOR services (2 of 2) (12)



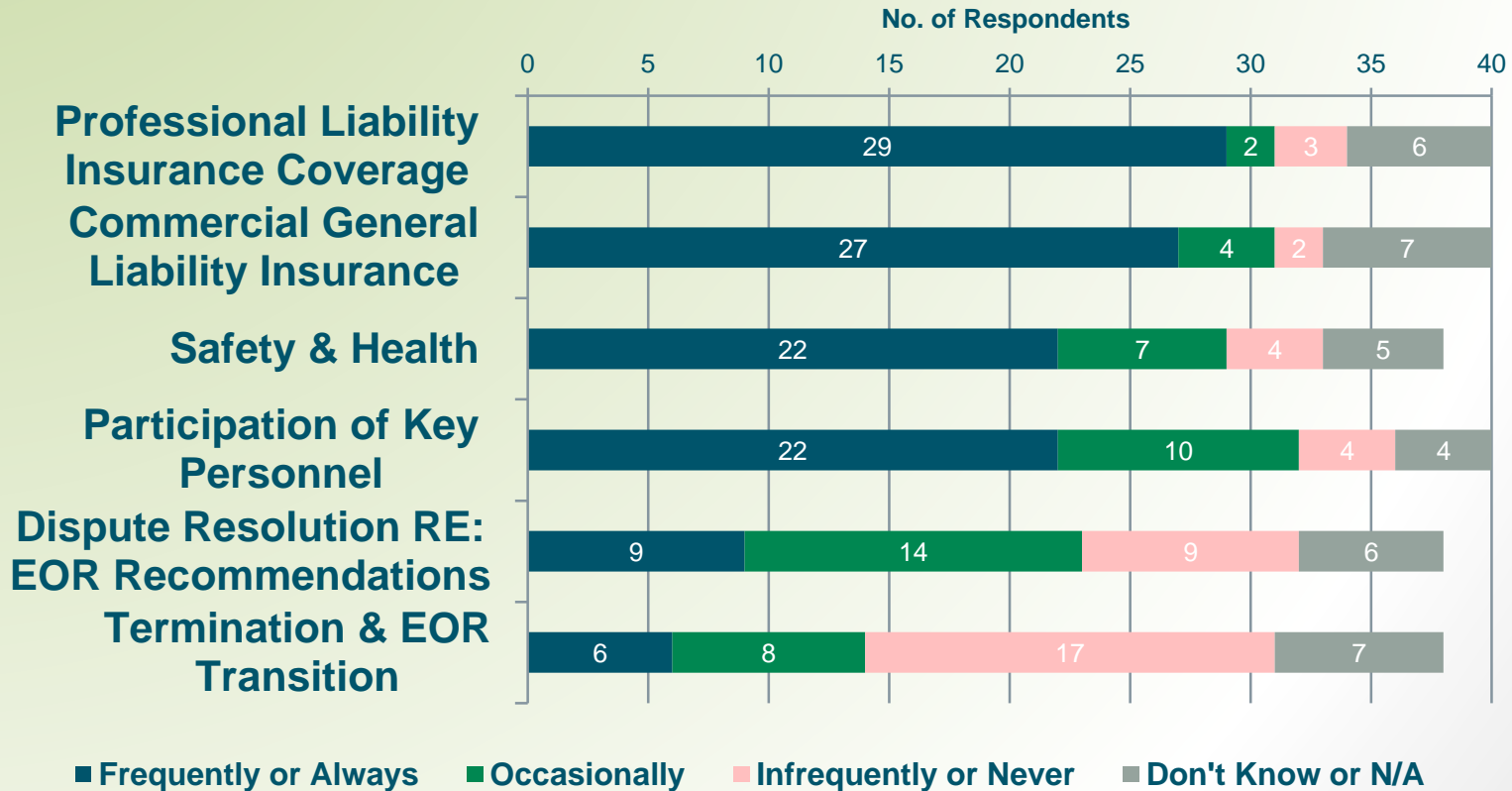
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TSF Project Participants (14)



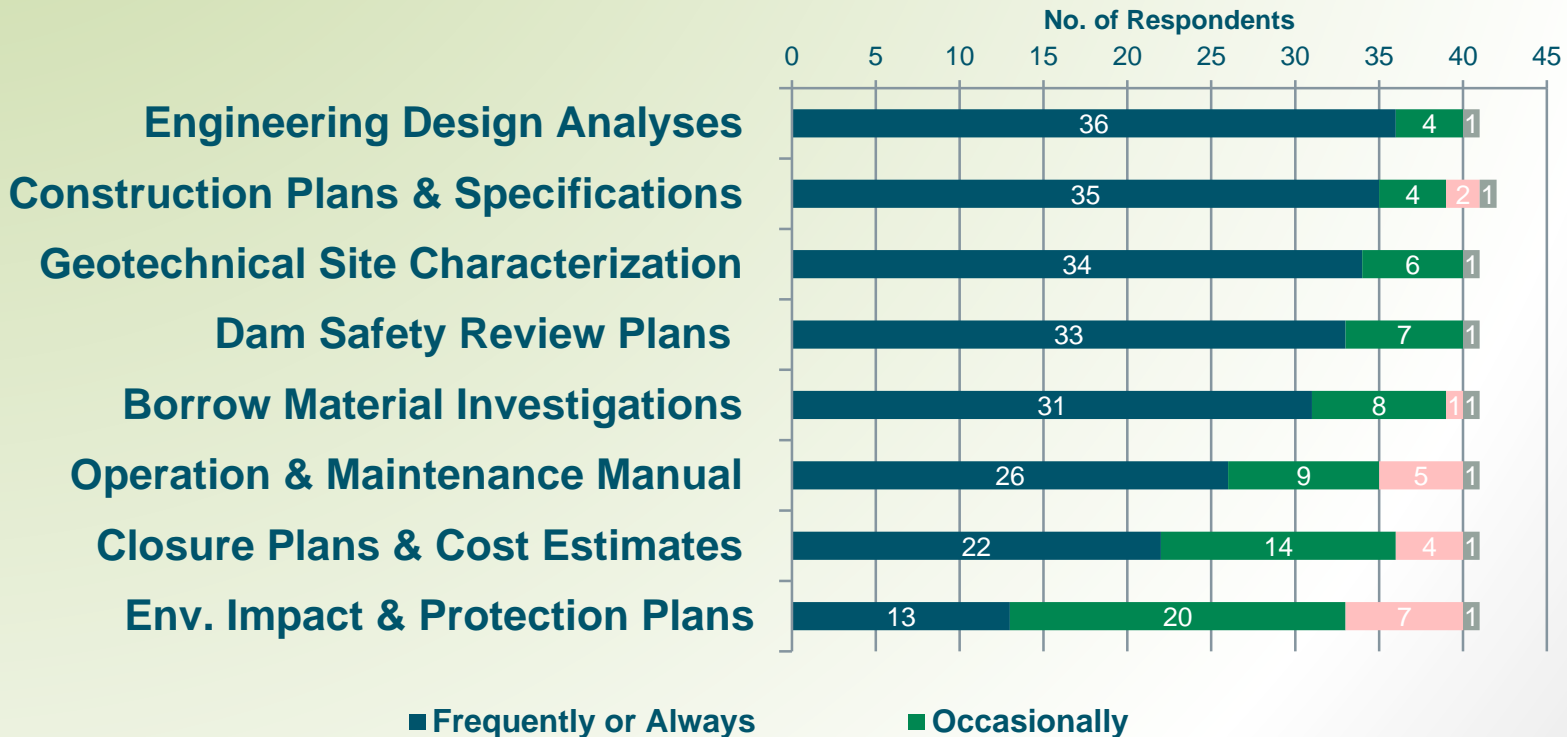
Pre-Workshop Survey

Contract Provisions Included in EOR Services (16)



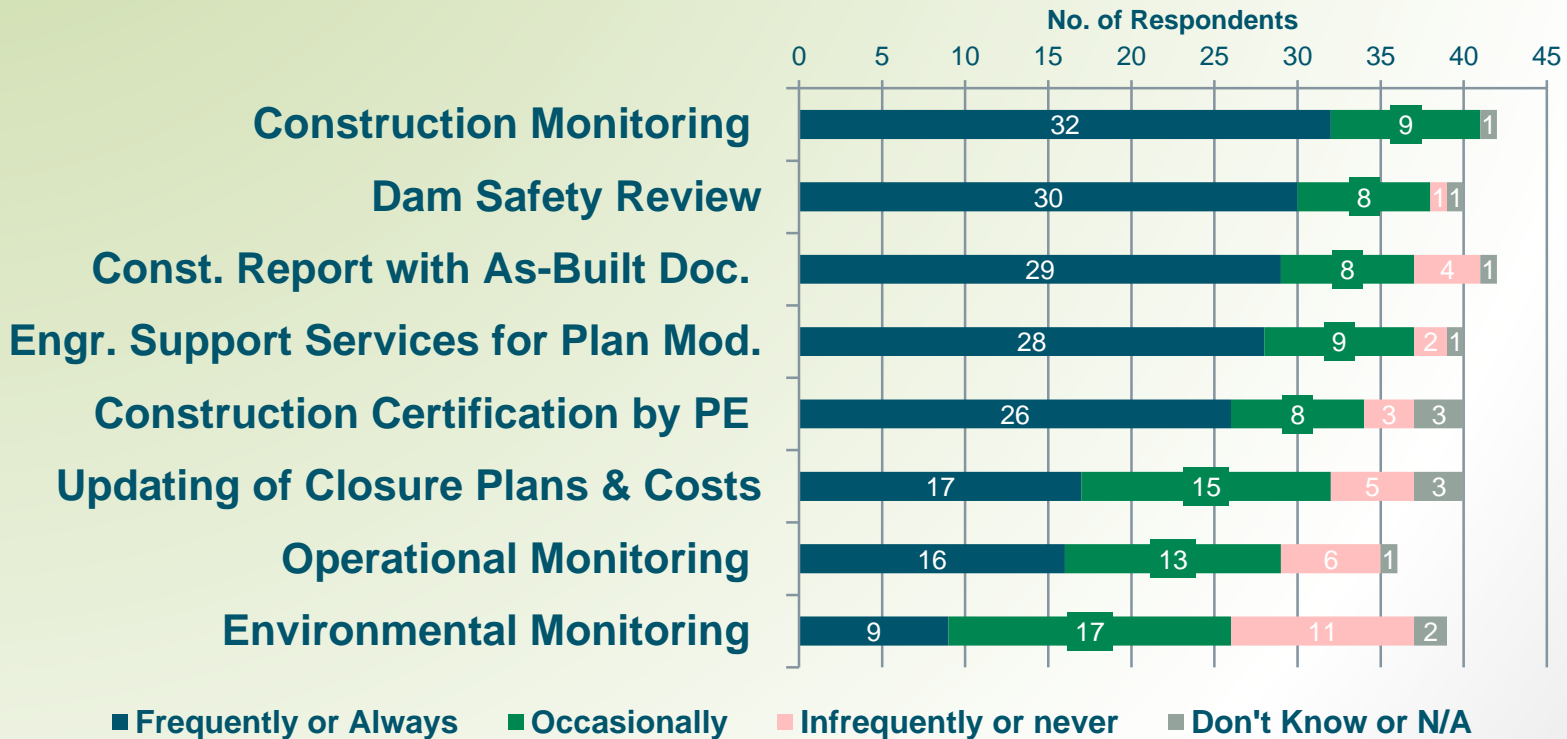
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Identify the Tasks or Services that are included in your EOR design services projects (18)



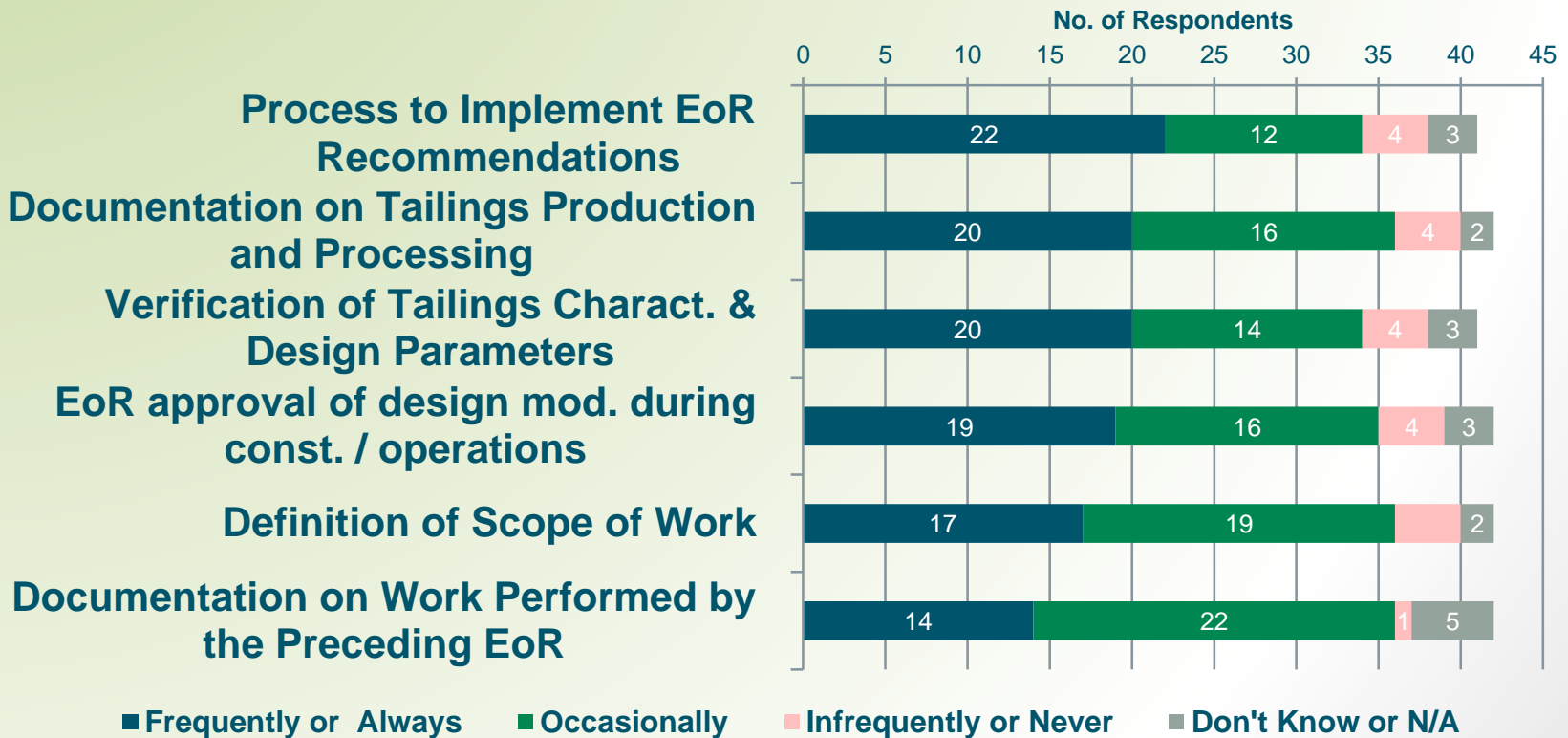
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Identify the tasks or services that are included in your EOR construction and/or operations projects (19)



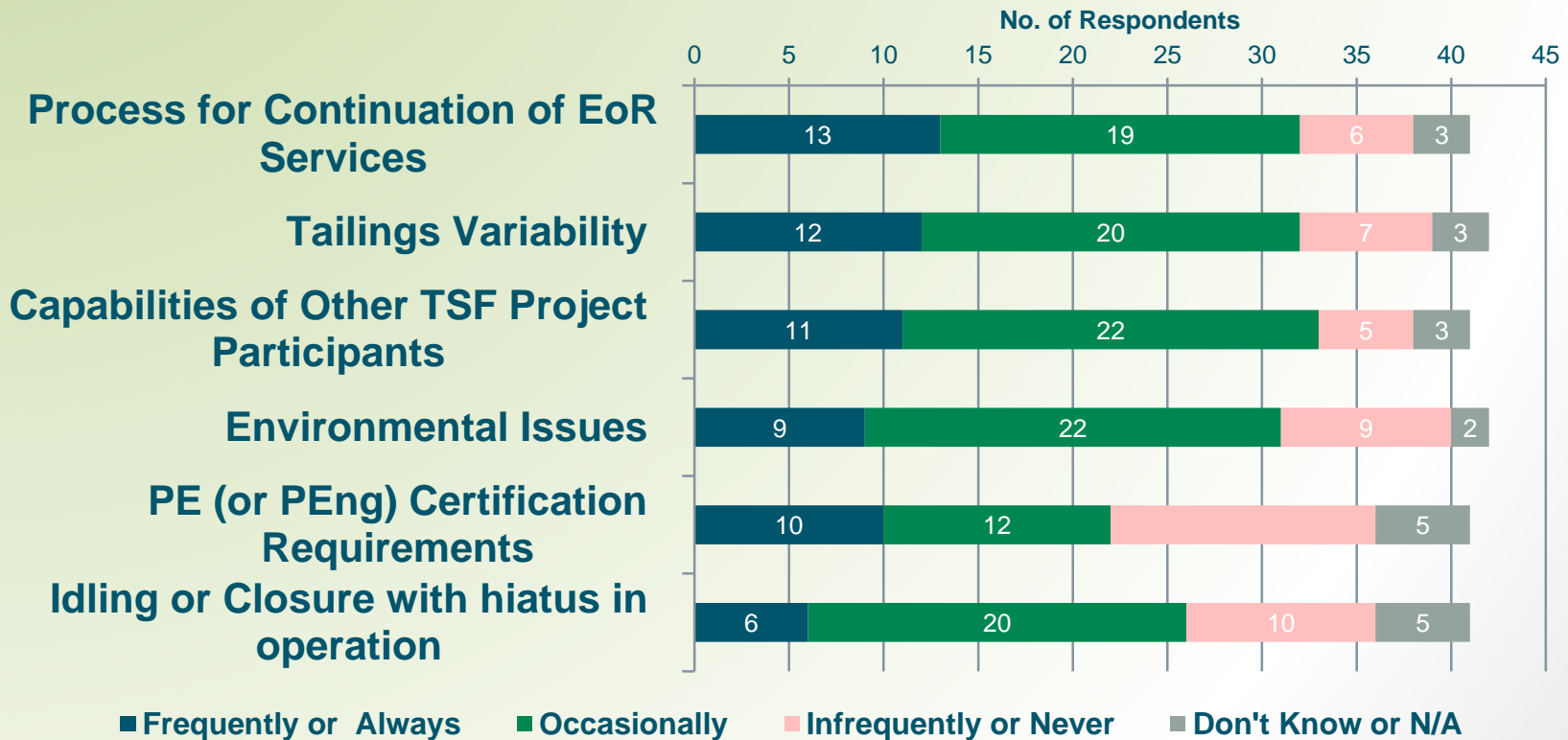
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Indicate if you view the following as concerns for your EOR Services (1 of 2) (22)



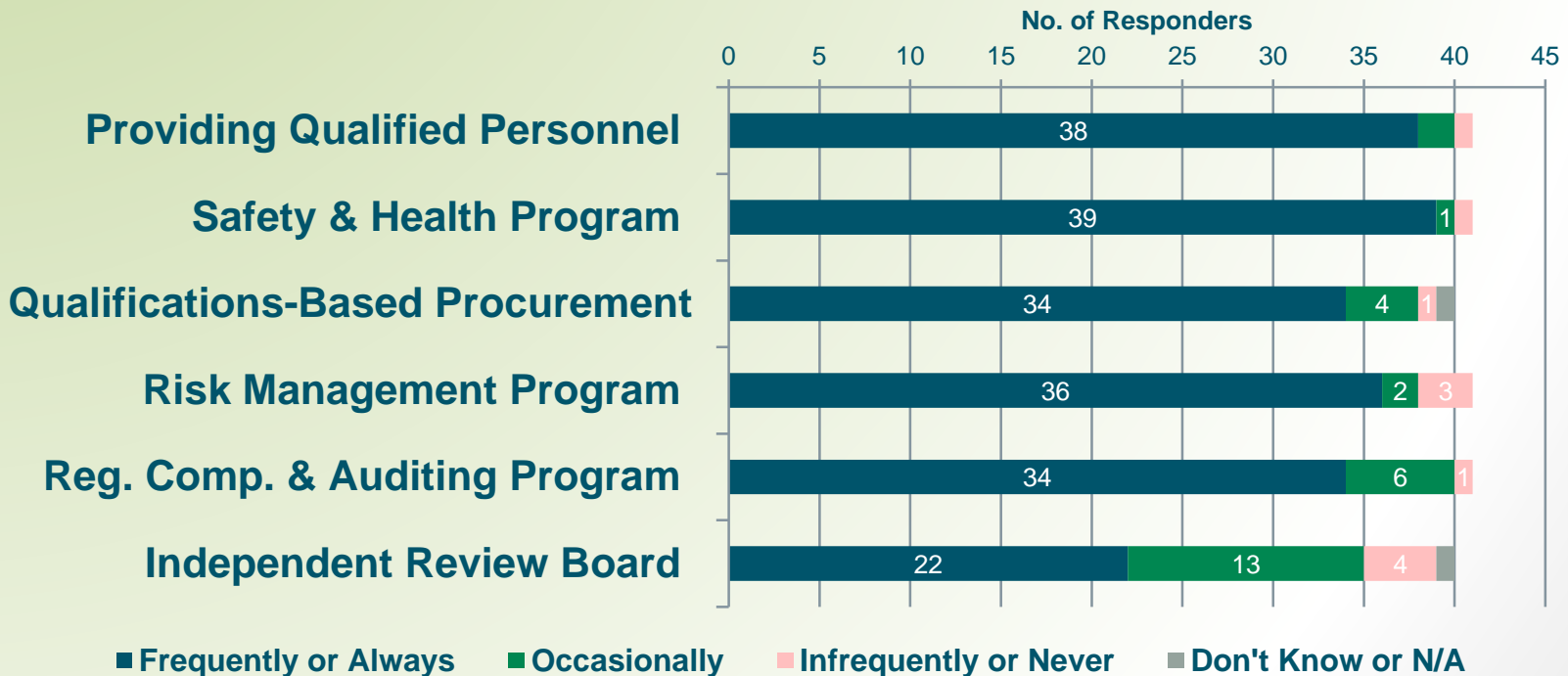
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Indicate if your view the following as concerns for your EOR services (2 of 2) (22)



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What do you consider to be the responsibilities of the Owner on TSF Projects (24)



Additional Responsibility:

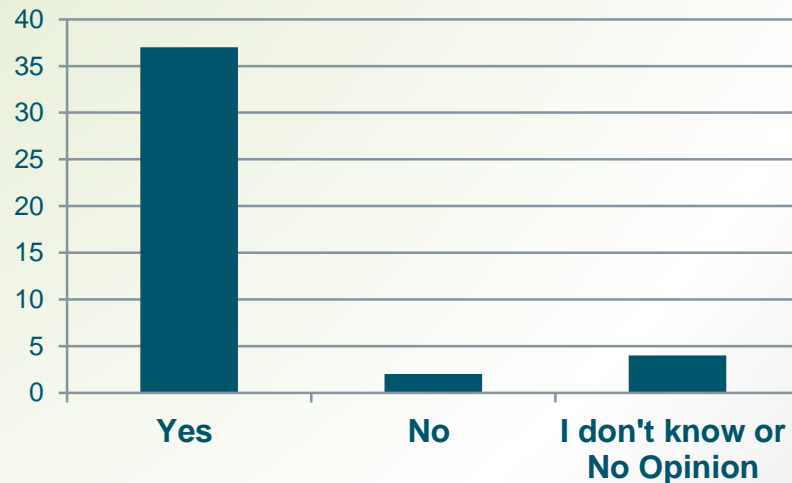
Procedure to address EOR concerns and corrective actions recommendations

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Awareness of challenges of providing EOR services (26) and development of internal policy for EOR services (27):

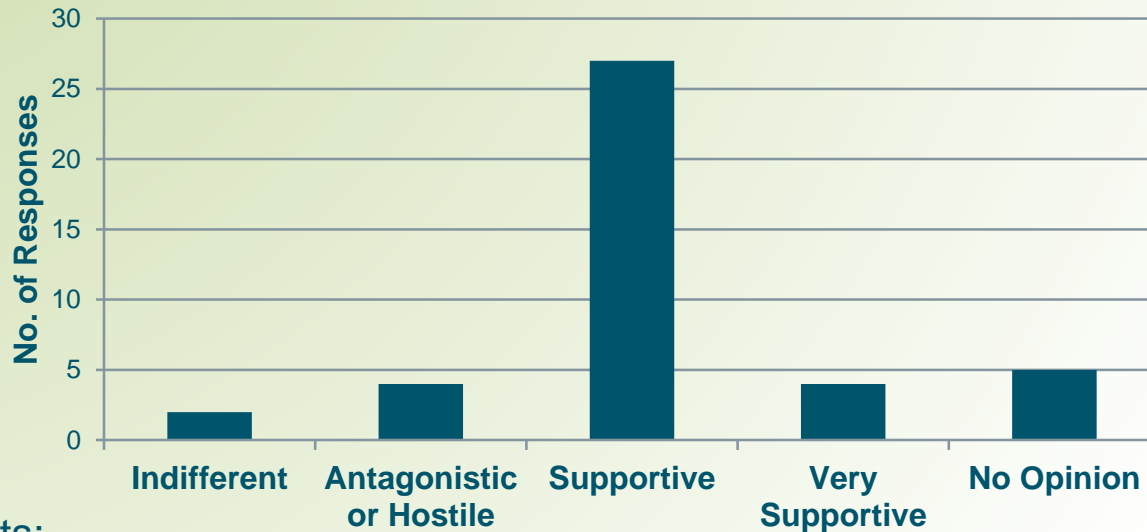
- 95% of respondents are somewhat aware to very much aware
- 40% of respondents indicate that an internal policy has been or is being developed at their firm

Is there a need for an industry document that clarifies the EOR role and the responsibilities of both the Owner and EOR (28):



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View of Owner's Perspective on the EOR's Role (30)



Comments:

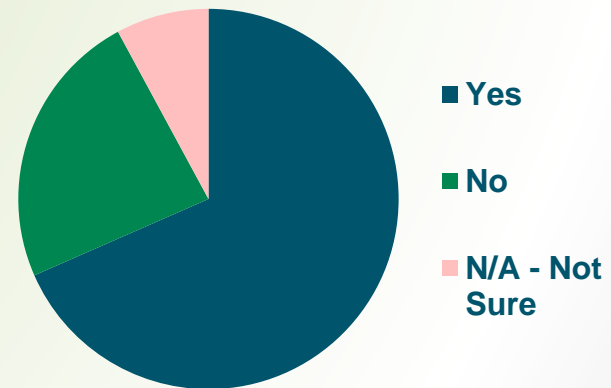
- Ranges significantly
- Dependent on site and owner's qualifications and understanding
- Takes time to build support

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Need for separate designation/definition of the EOR relative to design, construction and/or operation (32):

28 – yes

9 - no



Comments:

- Current definition of Designer of Record and distinction from EOR for construction
- Different qualifications and responsibilities
- Recognition of need for transition given facility life
- EOR needs to take responsibility for design through operation for consistency, safety, and holistic terms, and other professionals support the EOR on certain design or construction issues

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How have you addressed design responsibility and professional liability when retained for EOR design service (33):

- Defined scope of services, responsibilities, obligations
- Documentation of identified risks and concerns
- Contract language and limitation of liability
- Design reviews, QA and QC checks
- Communication

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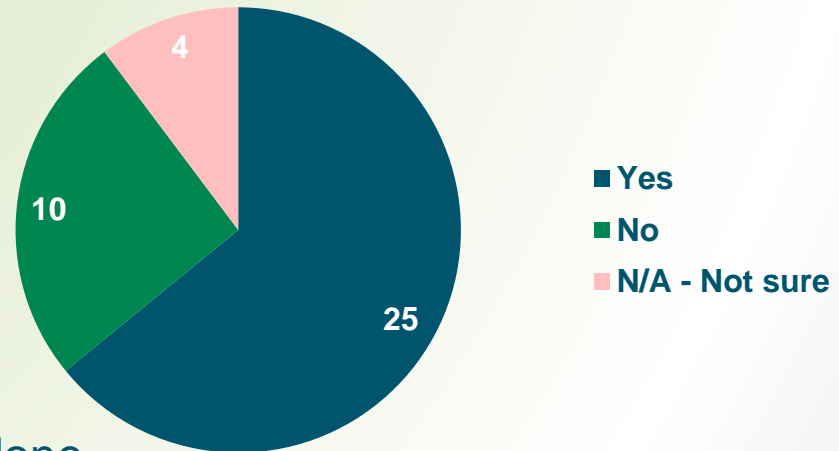
How have you addressed design and professional responsibility when retained to take over EOR services from another party on a TSF under operation? (34)

- Conduct dam safety review, previous design review as part of the transition
- Contact previous party to ensure having historical documents
- Independent assessment of potential risks
- Contract language, exclusion of previous work from current liability, limitation of liability, scope of work
- Design reviews, QA and QC checks

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Are there risks of angering clients if the engineering community advances and promotes EOR responsibilities?(36)

- Most “Yes” responses are qualified as worth the risk
- Some “No” responses indicate that the risk is from not acting



Comments:

- Enormous risk to all if this is not done
- Care needs to be exercised to avoid it looking like a “make-work” project for consultants
- Recommend soliciting input from ICMM and owners about guidance before distributing widely

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Additional Feedback:

- Any definition of EOR should be clear on the objective, but leave flexibility as to how accountabilities are divided and the responsibilities are discharged
- With many different groups are working on this same initiative, raising concern for consistency in terminology and potential for contradictory guidance
- Concern that defining the EOR role provides a clear path for civil and criminal liability, which needs to be considered
- Survey responses are individual opinion and not necessarily the policy or position of the respondent's organization