Bureau of Safety and Environmental Enforcement

BSEE BAST Determination Process

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Transportation Research Board

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"To promote safety, protect the environment and conserve resources offshore through vigorous regulatory oversight and enforcement."

What BAST?

Outer Continental Shelf Lands Act (OCSLA)

"..on all new drilling and production operations and, wherever practicable, on existing operations, the use of the best available and safest technologies which the Secretary determines to be economically feasible, wherever failure of equipment would have a significant effect on safety, health, or the environment, except where the Secretary determines that the incremental benefits are clearly insufficient to justify the incremental costs of utilizing such technologies." (43 U.S.C. 1347(b))

BAST Program

Foundation: As new technologies emerge, the use of those technologies must first be assessed to safeguard against unintended consequences and/or improper application of those technologies.

Definition: Best Available and Safest Technology (BAST) means the best available and safest technologies that the BSEE Director determines to be economically feasible wherever failure of equipment would have a significant effect on safety, health, or the environment.

Source: Oil and Gas and Sulphur Operations in the Outer Continental Shelf, 30 CFR 250 (July 1, 2013).

Key Terms

Technologies: The term “technologies”, generally refers to critical safety equipment, systems (multiple pieces of equipment and control devices) and programs (e.g., computer software) that supports the operation of a larger piece of equipment.

Available: The term “available” refers to technologies existing in the marketplace and is accessible under reasonable terms and conditions.

A BAST Determination process will specify performance level(s) for technology based on evaluation of the best performing equipment currently available.

The Director of BSEE determines when the BAST Determination Process is initiated and makes the final determination of BAST based on information provided.

BAST Program Objectives

- Compliance with statutory mandate
- Focus on technological solutions to safety issues
- Focus on critical safety equipment
- Establish performance levels based on evaluation of available technology
- Transparent process
- Stakeholder engagement
- Satisfies cost/benefit

BAST will NOT result in:

An automatic phase-out of existing technology

An automatic review of existing systems and technology

www.bsee.gov/BAST

BAST Assessment Triggers

- Plan Review and Approval (e.g., DWOP)
- Incident Investigations (e.g., BSEE 2010)
- QA/QC Assessment (e.g., QC FIT)
- Safety Alert
- TAP Findings and Recommendations
- Near Miss Reporting System (under development)
- Technical Forums and Meetings
- Other External Sources

BAST Determination Process

Overview

Stage 1 - BAST Assessment & Initial Feasibility

- BSEE evaluates circumstances leading to a BD
- BSEE drafts a Technology Improvement Objective (TIO)
- BSEE establishes Statement of Work (SOW)
- BSEE issues Public Notices requesting comments
- BSEE selects Qualified Third Party (QTP)

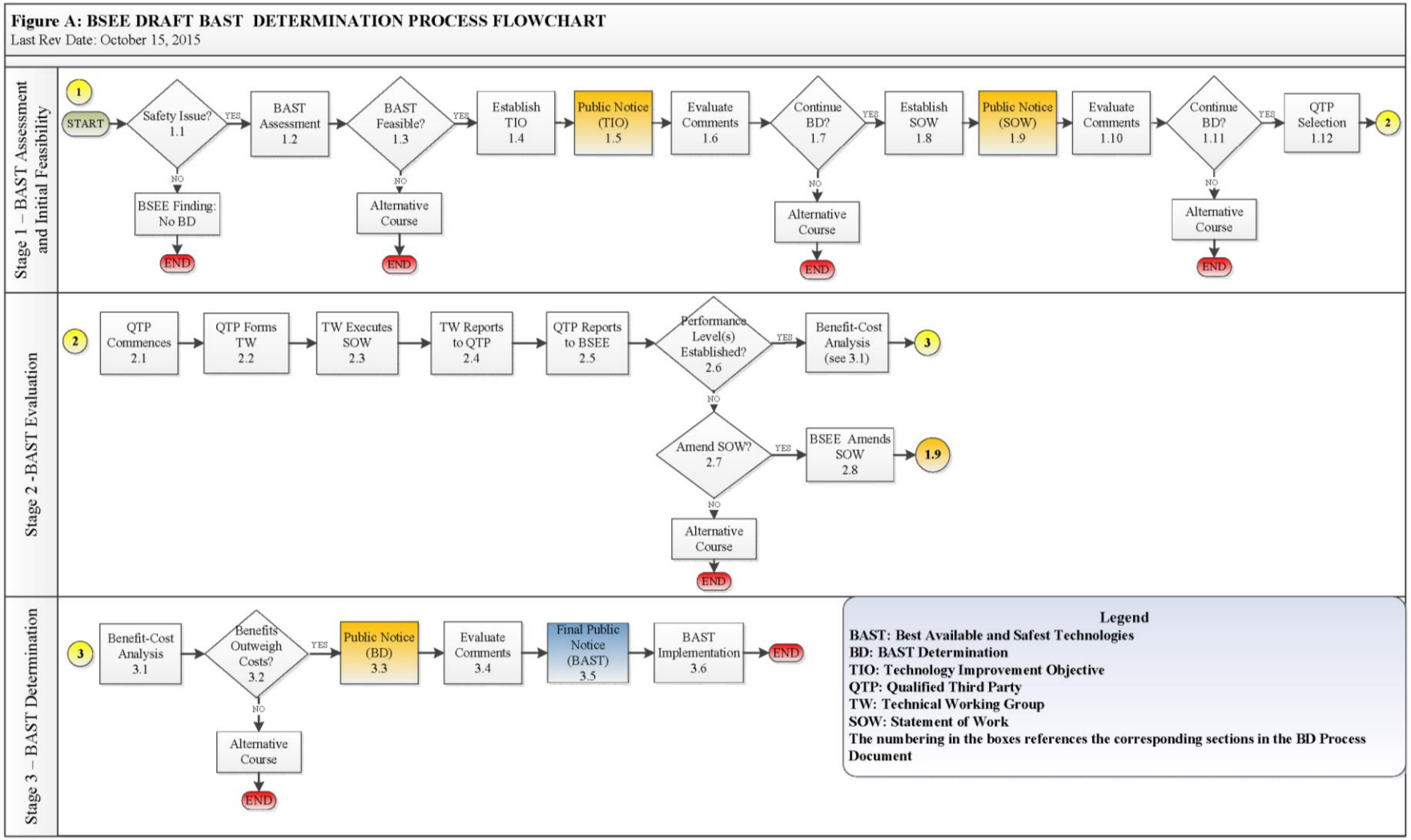
Stage 2 - BAST Evaluation

- QTP manages evaluation
- QTP forms Technical Workgroups (TW)
- TW executes SOW
- BSEE reviews findings from QTP & TW

Stage 3 - BAST Determination

- BSEE conducts economic Benefit-Cost Analysis (BCA)
- BSEE issues Public Notice requesting comments
- BSEE issues Final Public Notice
- BAST requirement needs to be implemented on the OCS

BAST Determination Process Flowchart



BAST Determination Process

Stage 1 - BAST Assessment and Initial Feasibility

Annual assessment by Director to determine if safety issues (incidents, accidents, near misses) warrant BD

If a Safety issue has been identified, BSEE conducts an assessment to determine if a BD could resolve the issue by evaluating:

- **Technology Failures**
- **Improvements in Safety**
- **Availability of Technology**
- **BSEE Resources**
- **Feasibility (benefit/cost)**

BAST Determination Process

Stage 1 - BAST Assessment and Initial Feasibility

BSEE develops a TIO explaining the safety issue and the improvement agency is seeking.

BSEE solicits comments through one of the following:

- **Notice to Lessees (NTL)**
- **www.BSEE.gov**
- **Federal Register**
- **Public Forum**

BAST Determination Process

Stage 1 - BAST Assessment and Initial Feasibility

BSEE issues SOW (TIO, tasks, timeline) and solicits comments

BSEE contracts with QTP to implement SOW

Who can be a QTP?

- **OESI**
- **Standard Development Organizations (SDO)**
- **Certifying Entities**
- **National/Private Labs**
- **Other Agencies/Entities**

BAST Determination Process

Stage 2 – BAST Evaluation

QTP responsibilities include:	Forms TW(s) to evaluate solutions to SOW
	Identify scope of testing/additional data needed by TW
	Provide oversight of third party testing/statistical analysis
	Develop budgets/timelines
	Perform industry outreach
	Review TW work, reports, & ensures SOW is addressed
	Provide BSEE with TW final report

TW composed of individuals with appropriate technical expertise for task at hand

BAST Determination Process

Stage 2 – BAST Evaluation

TW develops Functional (Operational) Requirements (**FoR**) that candidates technologies must meet

FoR may include:

-physical requirements

-environmental conditions

-inspection/maintenance concerns

-quality issues

-other

BAST Determination Process

Stage 2 – BAST Evaluation

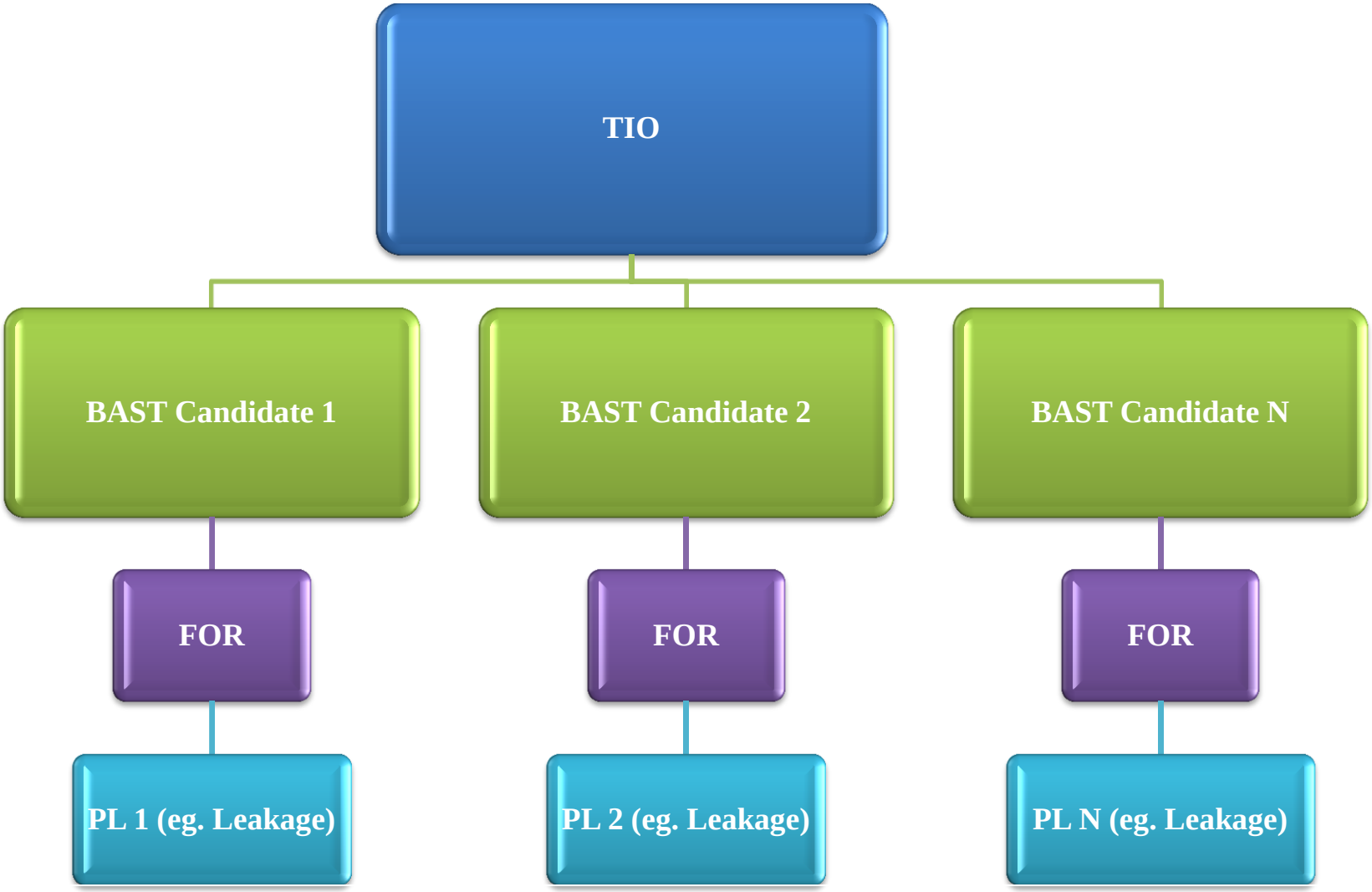
TW Establishes Performance Levels (**PL**)

PL ***specifies how well a technology executes its' function*** ass determined thru testing and/or evaluation of operational history

TW must address repeatability & reproducibility of technology as part of their evaluation

TW compares/assesses **PL** of various technologies that meet **FoR**

TIO, FoR, and PL Relationship



BAST Determination Process

Stage 3 – BAST Determination

BSEE performs a Benefit Cost Analysis consistent with OCSLA and OMB's Circular A-4

If Director determines that implementation of proposed PL meets BCA then BSEE solicits comments through Public Notice

Public Notice includes TIO, PL, BAST implementation schedule

BAST Determination Process

Stage 3 – BAST Determination

After evaluating Public Notice comments BSEE determines if it should proceed with BD implementation

If BSEE decides to implement the BD the agency will release a final decision including effective date

After a BD is effective, operators will be required to use technology that meets specified PL for new and, *wherever practicable,* existing operations

Operators may request waiver from BAST requirement for existing operations by submitting the appropriate documentation to BSEE

BAST Determination Process

Alternative Course Methods: Addressing Technology Failures Outside of the BD Process

BSEE Issues “Safety Alert” or Industry issues “Alert/Notice”

BSEE or Industry develops revised maintenance, inspection, and/or operational procedures

BSEE or Industry R&D

Industry develops a new/revised standard or BSEE incorporates them into regulations

BSEE issues conditions of approval in plan/permit,

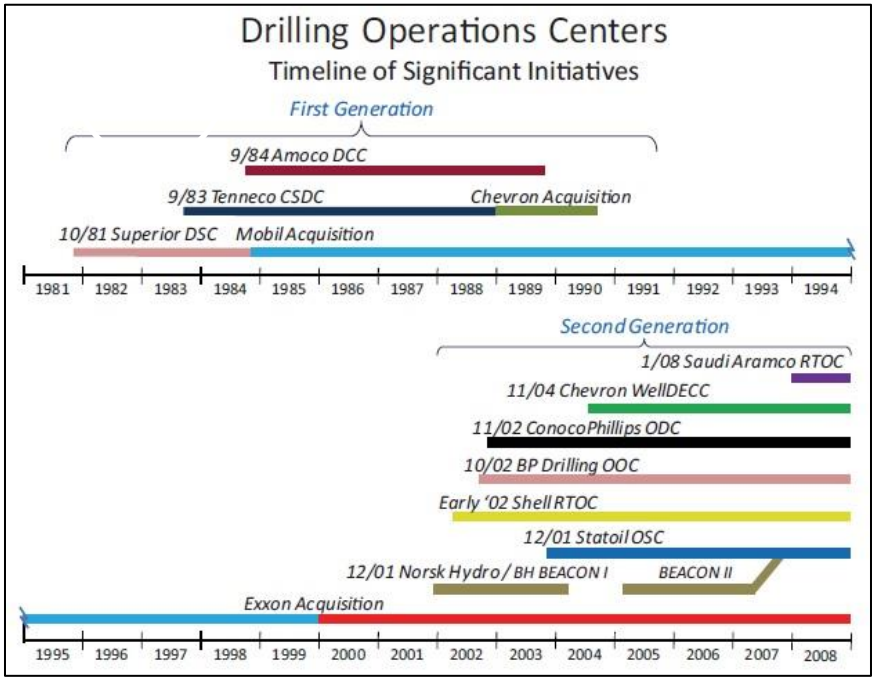
BSEE develops new/revised regulations

Real Time Monitoring

Real Time Monitoring (cont.)

- Allows for real time assessment of operations.
- Allows for remote participation in well and operations planning and monitoring

- R&D Studies
  - BSEE TAP 707 RTM completed 2014 (838 Inc.)
  - BSEE TAP 724 RTM completed 2015 (TRB NAS)
  - Critical Barriers RTM 2016 (Deepstar)
  - API ?



BDP Summary

Takeaways

- Three stages
- Performance based
- Transparent – 3 Public Notices requesting comment
- Triggers – domestic/international safety issues
- Technology driven

BSEE Website: **www.bsee.gov**

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