THE NATIONAL ACADEMIES

DIVISION ON EARTH AND LIFE STUDIES

A Review of Genwest's Final Report on Effective Daily Recovery Capacity (EDRC)

A Letter Report

Study Update

November 19, 2013

Marine Board Meeting

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Advisers to the Nation on Science, Engineering, and Medicine

National Academy of Sciences
National Academy of Engineering
Institute of Medicine
National Research Council

Study organized by the Ocean Studies Board, Division on Earth and Life Studies (DELS)

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Background

Effective Daily Recovery Capacity is used to estimate the recovery capacity of oil skimmers.

- Derates the nameplate capacity of the pump by 80% to account for limiting factors such as daylight, weather, sea state, and emulsified oil in recovered material.
- Was the first effort to quantify oil spill recovery equipment following the *Exxon Valdez* spill.
- BSEE uses it as the regulatory planning standard for owners or operators of oil handling, storage, or transportation facilities seaward of the coastline.
    - Owners and operators must have a recovery response plan to be in compliance with regulations.

Problems

1. **With the current EDRC planning standard, a plan holder can meet the regulatory requirements by maintaining a skimmer or fleet of skimmers with an oil handling capacity that exceeds the amount of oil the plan holder would be responsible for in a spill event.**
   - Possessing the skimmers is sufficient to meet the standard.
   - Whether the skimmers can effectively recover oil in a given situation or whether there is adequate storage for recovered oil is not required.

Problems

2. **The *Deepwater Horizon* spill highlighted that EDRC may not be an effective or accurate planning standard and predictor of oil response recovery by an oil skimmer.**
   - Recovery rates were much lower than 20%.

Genwest Report

The Bureau of Safety and Environment Enforcement commissioned Genwest to evaluate EDRC.

Genwest Report Objectives:

- Validate the most appropriate methodologies for estimating EDRC of oil skimming systems
- Provide recommendations for EDRC improvements to inform oil spill planning and preparedness
- Make recommendations for new EDRC methodologies and guidelines

Genwest Report

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Genwest's Proposal: Estimated Recovery System Potential (ERSP) calculator

- Accounts for variation in oil thickness encountered by skimmer
- Accounts for daylight, change in oil thickness over time, amount of water emulsified in encountered oil
- Reflects fully recovery cycle associated with on-water oil spill skimming systems

Report authors: Al Allen, Dean Dale, Jerry Galt, and John Murphy of Genwest Systems, Inc.

Published: December 7, 2012

Available at http://www.bsee.gov/Research-and-Training/Technology-Assessment-and-Research/Project-673.aspx

Statement of Task

An ad hoc National Research Council committee will review EDRC Project Final Report for oil skimming systems.

Specifically, the review will address the following questions:

Methodology

- Are the methods used to estimate an oil skimming system necessary and scientifically sound?
- Does the proposed three-day model address conditions expected to be encountered on the U.S. Outer Continental Shelf?

Statement of Task

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Methodology (cont.)

- Are there any data or methodological gaps that would preclude the use of this report for decision making? If so, how should they be addressed?
- Can this report and associated computer-based methodology be used as a scientifically credible source to appropriately support rule-making?

Applicability

- Does Genwest's use of units throughout the report align with the actual factors?
- Are the variables used to determine a system's efficiency properly defined?

Statement of Task

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Applicability (cont.)

- Is the use of the unit "day" to describe thickness an appropriate metric?
- Does the Estimated Recovery System Potential (ERSP) process appropriately incorporate operational period, thickness factors, and "batch" or "continuous release" scenarios?

Computer Model

- Are the assumptions underlying the computer model correct and adequate?
- Does the model run as described without compounding errors?

Committee

Steve Ramberg, Chair, National Defense University

Michel Boufadel, New Jersey Institute of Technology

Victoria Broje, Shell Exploration and Production Company

Deborah French McCay, RPS ASA

Antonio Possolo, National Institute of Standards and Technology

Study Schedule

Study duration: May–November

Committee Meetings:

- July 15, BSEE present
- July 25, webinar with Genwest report authors

Deliverable: Letter Report

Release date: November 27