Advisory Committee for the Ocean Energy Safety Institute

23 October 2015
Facility Safety Information
Welcome

Mr. Dwight Johnston
Chairman
Dr. M. Sam Mannan
OESI, Principal Investigator
Safety Moment

Tim Thornton
FMC Technologies
Design For Safety

Approaching Safety from a Proactive Perspective
Design for Safety

• To ensure inherent safety
  – Must be deliberate
  – Requires forethought
    • How safe does it need to be?
      – Could someone be injured/killed?
      – Could the environment be impacted?

• To eliminate hazards
  – Can you eliminate the hazard?
  – Can you eliminate causes?
  – What about the human element?

Don’t just wait for Operations to deal with it!
DFS Principles: Drive and Influence Designs

1. Persons with Control – promote prevention
2. Product Lifecycle – focus on elimination
3. Systematic Risk Management - identify & mitigate
4. Knowledge & Capability – demonstrate competencies
5. Information / Knowledge Transfer – thorough documentation

DFS plays a key role throughout the lifecycle to eliminate / minimize risks
Behaviors Need To Change

From: How can we make this work?
To: **What can we do to design out failures?**

From: What can we do to the process to make it work most of the time?
To: **What can we do to the process to assure that a qualified person following instructions gets it right every time and if they don’t follow instructions no harm can be done?**

From: Hope we catch the problem;
To: **Know we won’t have the problem throughout the lifecycle.**

From: “Can Pass”;
To: “**Won’t Fail**”
Welcome/
Review of Action Items/
Approval of Minutes

Jim Pettigrew
OESI
"The funding for this initiative was provided to establish an institute that would operate independently of the Department of the Interior while also supporting and enhancing Departmental programs through collaborative research and development and training to help identify operational improvements in the areas of offshore drilling and production safety and spill prevention.

This is an effort to establish an institute that can work with academia, the oil and gas industry, regulators and non-governmental organizations on the extremely important issues of increasing worker safety and environmental protection during the exploration, development and production of the nation’s valuable offshore oil and natural gas resources."
enabling safe and environmentally responsible offshore energy operations
Action Items

• Provide Director Salerno letter to AC
  – Letter emailed to AC
• Set up conference calls with AC before next meeting to discuss research topics in detail
  – Webex conducted 20, 21, 22 October
  – Posted to AC section of OESI website
• Chair and DirOps will draft a process for AC review of research ideas
  – Draft process will be presented today
Action Items (cont)

• Send AC presentation slides out
  – AC presentation posted in AC section of website

• Develop an agenda early so AC members can prepare for next meeting
  – Agenda sent out to AC ~10 days prior. Goal is to be > 2 weeks.

• Ensure OESI budget is a topic at the October AC meeting
  – Budget presentation is on today’s agenda
Approval of Minutes
OESI Research Update

Jim Pettigrew
OESI
Research Grand Challenges

• **Well Construction**
  – well construction optimization, barrier design and verification, kick detection, subsea well control, pore pressure/fracture evaluation and prediction, zonal isolation

• **Human Factor Engineering and Risk Management**
  – leading indicators, human centered design, human machine interface, reengineering design life cycle

• **New/Superior Material**
  – metal alloys, corrosion, HPHT materials, elastomers, structural health monitoring, integrated sensor, polymers
### Near-term Research Plan

<table>
<thead>
<tr>
<th>Research Areas</th>
<th>Leading Institute</th>
<th>Partner Institute</th>
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<tbody>
<tr>
<td>New Material (polymers, bolts)</td>
<td>UH</td>
<td>A&amp;M</td>
</tr>
<tr>
<td>Human Factor Engineering &amp; Risk Management</td>
<td>A&amp;M</td>
<td>UT</td>
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<tr>
<td>(leading indicators, human centered design for deep water)</td>
<td></td>
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<tr>
<td>Well Construction (well control, zonal isolation, casing)</td>
<td>UT</td>
<td>UH</td>
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...enabling safe and environmentally responsible offshore energy operations...
OESI Research

• Currently conducting
  – Existing research study
  – Determining gaps in current research
  – Developing deliverable and path ahead for research

• Three current research areas will provide update to Advisory Committee at each future meeting
Future Research Process

Dwight Johnston
Chairman
DRAFT
OESI Training and Education

Jim Pettigrew
OESI
OESI Training

• Initial opportunities in 2016
  – Process Safety Management
  – Subsea Systems Safety
  – Real-time monitoring best practices

• What other areas would the AC like to see OESI provide training
Possible OESI Forum Topics

Jim Pettigrew
OESI
Proposed Topics

• How to keep Offshore Process Safety efforts ‘up’, during an Energy Industry ‘down’turn
• Cyber considerations and preparations in the Offshore E&P process
• Arctic E&P operations after Chukchi
• Climate Change and the Offshore Oil and Gas Industry
• How can we eliminate risks (hazards), or mitigate them better, so as to eliminate catastrophic effects (hazard prevention vs. hazard effects)
• Process safety and Risk management in the Offshore environment
• Innovative Data management in support of safe offshore operations
Forum Planning

• Forum construct and planning should be based on input from across the AC
  – Should we establish a Forum Planning group

• 3-4 topics for 2016
  – March, June, September…
OESI Budget Review

Jim Pettigrew
OESI
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OESI Budget

OESI Budget ($K)

<table>
<thead>
<tr>
<th>Year</th>
<th>Additional</th>
<th>Budgeted</th>
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<tr>
<td>FY14</td>
<td>$201</td>
<td>$1,111</td>
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<tr>
<td>FY15</td>
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<td>FY18</td>
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</tbody>
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http://oesi.tamu.edu
enabling safe and environmentally responsible offshore energy operations

OESI Expended

FY14

$609K of $1,312K

Outreach/Forums: $21
Research: $54
Director Tasks: $534
Indirect: $279
Salaries: $237

FY15

$979K of $1,435K

Outreach/Forums: $98
Research: $135
Director Tasks: $746
Indirect: $59
Salaries: $240

FY16

$1,644K of $1,362K

Outreach/Forums: $300
Research: $240
Director Tasks: $279
Indirect: $237
Salaries: $588

http://oesi.tamu.edu
OESI planned expenditures

FY17

- Outreach/Forums: $350
- Research: $164
- Director Tasks: $240
- Indirect: $0
- Salaries: $629

$1,383K of 859K

FY18

- Outreach/Forums: $350
- Research: $0
- Director Tasks: $132
- Indirect: $0
- Salaries: $632

$1,114K of $761K
Future Advisory Committee Schedule and De-conflict

Jim Pettigrew
OESI
Future OESI AC Meeting Dates

• Tuesday, 19 January 2016
  (API E&P Winter Standards 18-22 January)
  – Tuesday, 12 January or Tuesday, 26 January
• Tuesday, 19 April 2016
  (NOIA Annual, 20-22 April)
  – Tuesday, 12 April or Tuesday, 26 April
• Tuesday, 19 July 2016
• Tuesday, 18 October 2016

Would your Company be interested in hosting a future AC meeting?
Summary of Discussion

Jim Pettigrew
OESI
Thanks and Be Safe Out There…