

**C-NLOPB Response to
EMCP September 8, 2011 Response to Part II Review Comments**

EMCP Comment 152: C-NLOPB 45

August 30, 2011 C-NLOPB Comment: The OPG report simply cites data from the 2006 Scandpower for standard North sea systems and SINTEF's analysis for non-North Sea Standard systems. As the Proponent uses the Scandpower data from the OPG report, the Proponent should just cite the Scandpower report from which the data is obtained.

The proponent should also use the most recent Scandpower report which is 2010, and as needed update statistics, the discussion of the statistics and predicted effects to reflect the more recent data. The Proponent should also use Scandpower statistics that have not been adjusted for possible trends in this analysis.

September 8, 2011 EMCP Response: The Scandpower 2006 report is not the reference for the data in Section 14.1. Rather the CSR references the data from the IAOGP 2010 report, which in turn references the 2006 Scandpower data. To reduce confusion, reference to Scandpower 2006 has been removed and only IAOGP 2010 is referenced. EMCP and its contractors do not have access to the Scandpower 2006 report. The only data used in the CSR is that which is publicly available. The IAOGP 2010 was the most recent data available when Section 14.1 was developed, and still is the only up-to-date publicly available data.

EMCP does not have access to the Scandpower 2010 report, as is it not publicly available. However, in support of its application for an Operations Authorization for platform drilling and production activities, EMCP will review any new publicly available spill frequency data and report its findings to the C-NLOPB.

September 9, 2011 C-NLOPB Comment: The reference and data used in the initial CSR submission, June 2010, was Scandpower 2000. A description of Scandpower's methodology for adjustment for trend is found at the bottom of page 14-7 of the CSR. EMCP's February 2011 response to the C-NLOPB's initial comment was to change the reference to Scandpower's 2006 report and add the 2010 OGP report. EMCP's latest response is "*EMCP and its contractors do not have access to the Scandpower 2006 report.*" EMCP has referenced material in the CSR for which it has not read and not understood the basis on which the data contained in the report is derived. The referencing of material that was not reviewed, and the basis and validity of the data provided not understood, is not appropriate.

The 2010 OGP report now referenced, repeats Scandpower's data. The data of the OGP report includes data that has been adjusted for trend. Section 4.1 of the OGP report states:

"Scandpower [2] annually review the SINTEF database ... They use the most recent 20 years 'data available. Their report explains how the analysis is done, however two key elements of this are:

- *Elimination of irrelevant incidents; and*
- *Adjustment due to trend over time"*.

The OGP report includes data that has been adjusted for trend; the data has been manipulated to adjust for trend; the data of the OGP report is not a simple division to produce a frequency.

The proponent should understand how the data was derived and whether it is a valid statistical approach. When the CSR is submitted, EMCP should be satisfied that the CSR reflects the best available data for blowout frequencies. In support of the application for an Operations Authorization for Hebron the proponent should provide a revised blowout frequencies section of the CRS that reflect data available at the time of the application. This information should also be made available to the public.

Report - CSR Section 14.1 [revised, track changes] July 2011

<u>#</u>	<u>Section</u>	<u>Subsection</u>	<u>Page</u>	<u>Comment</u>
7	14	14.1.1.3	14-6	<p>C-NLOPB Comment: In the bulleted list, where the proponent says “frequency” they mean something different.</p> <p>For example, the thing they’ve calculated in the first bullet is not “a 0.12 percent chance over the drilling period” but a deterministic expected occurrence of 0.12 spills for the 40-well drilling period of 30 years. Of course this is not a realistic number since the real occurrence must be expressed as a whole number (0,1,2...). The rate in “event per year” is more useful and would be $0.12 \div 30$ or 4×10^{-3} events/year.</p> <p>EMCP Response: As discussed with the C-NLOPB staff, spill statistics will be expressed as a number of occurrences. For instance, using the following example from the CSR, spill frequencies will be stated as follows</p> <p>Predicted frequency of extremely large hydrocarbon spills from blow-outs during a drilling operation, based on an exposure of wells drilled: $40 \times 1.5 \times 10^{-5} = 6.0 \times 10^{-4}$, or a 0.06 percent chance over the drilling period</p> <p>August 30, 2011 C-NLOPB Comment: Replace text with the following:</p> <p>The likely number of extremely large hydrocarbon spills from blow-outs during drilling operations, based on an exposure of wells drilled is</p> <p>$40 \times 1.5 \times 10^{-5} = 6.0 \times 10^{-4}$ events.</p>

				<p>EMCP September 8, 2011 Response: For section 14.1.1.3 The text has been changed to (see page 14-6 in the attached revised Section 14.1)</p> <ul style="list-style-type: none"> •Predicted frequency of extremely large hydrocarbon spills from blow-outs during a drilling operation, based on an exposure of wells drilled is $40 \times 1.5 \times 10^{-5} = 6.0 \times 10^{-4}$. •Predicted frequency of very large hydrocarbon spills from drilling blow-outs based on an exposure of wells drilled is $40 \times 6.0 \times 10^{-5} = 2.4 \times 10^{-3}$ •Predicted frequency of extremely large hydrocarbon spills from production/workover blowouts, based on an exposure of well-years is $200 \times 8.0 \times 10^{-6} = 1.6 \times 10^{-3}$ •Predicted frequency of very large hydrocarbon spills from production/workover blow-outs, based on an exposure of well-years is $200 \times 2.4 \times 10^{-5} = 4.8 \times 10^{-3}$.
				<p>September 9, 2011 C-NLOPB Comment: Page 14-6 in the bulleted list: replace the word "frequency" with the word "number" in each bullet.</p>

Additional Comments on Section 14-1 Track Changes:

Page 14-8, last paragraph, the number 3.3×10^{-3} should be followed by the words "blow-outs/releases per well drilled".

Page 14-10, first paragraph following Table 14-7 the number 4.8×10^{-5} should be followed by the words "blow-outs per well drilled".

Page 14-10, in the first paragraph of 14.1.2.2 the number of producing well-years from 1972 to 2005 in MMS jurisdiction is estimated as 235,000, but in the second paragraph the blowout count is divided by 250,000 (the estimated total number of producing well-years worldwide up to 2002). If the 235,000 producing well years is used, the result is 3.32×10^{-4} blowouts per well year rather than the 3.12×10^{-4} . Please verify/correct this.

Page 14-11, first paragraph, the number 1.85×10^{-4} should be followed by "blow-outs per well year".

Page 14-12, second paragraph following Table 14-9, replace the word "frequency" with "likely number".