



6 December 1999

REFER TO: SJS/sjs  
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SSN: 150537, 153260

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Kobe Steel Ltd. Hull # 681  
1084.96 ' x 169.95' x 93.17'  
FPSO  
Panamanian Registry  
**Passive Fire Protection Jackets**

Protective Concepts  
P.O. Box 11407  
Spring, TX 77391

We have your letter dated 18 September 1999 submitting one (1) copy each of the following reports:

**Jet Fire Test Report (project # 01-2135-001) for a pipe passive fire protection jacket from the Southwest Research Institute in San Antonio Texas**

**Blast Performance Testing for a Passive Fire Protection system for the Building Research Establishment in Cardington, England (Project # TCR 46/99)**

and your faxes dated 5 October 1999 and 29 November 1999 submitting general arrangement drawings for the pipe passive fire protection jackets and additional information for our review in association with a "Statement of Fact" review to ascertain whether the product that was jet fire tested and over-pressure tested met the appropriate standards as indicated in the test reports.

Based on our review of the results from the jet fire test conducted at Southwest Research Institute - Report# 01-2135-001 dated October 1998, we confirm that the passive fire protection jacket manufactured by Protective Concepts as described in the report and designed to protect a 10" pipe was tested to the standards as contained Offshore Technology Report - OTI 95 634, "Jet-Fire Resistance Test for Passive Fire Protection Material" and meets the acceptance criteria for a J-60 hydrocarbon jet fire test.

Based on our review of the results from the blast performance test conducted at Building Research Establishment, Report TCR 46/99 in February of 1999, we confirm that the passive fire protection jacket manufactured by Protective Concepts and designed to protect a 10" pipe was tested in a confined vent test to simulate an explosive load by using an impulse pressure loading as detailed in the subject test report and as noted in the report this pipe protective jacket resisted the effects of three impulse pressure load to simulate a explosive blast up to 1.4 bar.



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The 6" pipe passive fire protection jackets were inspected at Protective Concepts facility according to ABS survey report 99-HS29423 dated 13 October 1999 and the 6" and 10" maintenance and Emergency Shutdown Valves were inspected at Protective Concepts facility according to ABS survey report 99-HS29725 dated 17 November 1999 and found to be of the same material and construction standards as that of the 10" pipe passive fire protection jacket that was tested in the above mentioned reports with the exception of interchangeable use of 304 Stainless steel or Inconel wire mesh and 2 mil stainless foil.

Please note that our review is made for a statement of fact for the subject unit only. Our review is made only under the premise that the pipe passive fire protection jackets used on the subject unit are fabricated in the manner as that with which was tested, in both construction and materials use and that they are initial installed by a representative from Protective Concepts to insure proper fit.

An invoice for our services is enclosed. If you should have any questions regarding the review, please contact me at (281) 877-5923.

Very truly yours,

A handwritten signature in black ink that reads "Steve Scanio". The signature is written in a cursive style with a horizontal line underneath the name.

Steve Scanio  
Senior Engineer  
MODU Stability Group  
Offshore Engineering Department

Enclosure