

U. S. DEPARTMENT OF THE INTERIOR
SMALL BUSINESS INNOVATION RESEARCH PROGRAM

Page 1-1
Final Report
22 June 198

PHASE I—FY 1983
PROJECT SUMMARY

Attention:

Mr. F.M. Galinsky, Contracts Mgr.
Mr. C. Day, Contracting Officer
Mr. C.E. Smith, Contracting Officers Representative

Contract No. 14-12-0001-30116
Minerals Management Service
12203 Sunrise Valley Dr., MS64
Reston, Virginia 22091

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Program Office	TTM	Proposal No.	Topic No.
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TO BE COMPLETED BY PROPOSER

Name and Address of ~~Proposer~~ Contractor

STARFIRE ENGINEERING, INC.
15603 KUYKENDAHL, SUITE 160
HOUSTON, TEXAS 77090

Name and Title of Principal Investigator

DR. D. BYNUM, JR., PRESIDENT

Title of Project

MINIMIZE MARINE PIPELINE OIL SPILL

Technical Abstract (Limit to two hundred words)

The scope of this Phase I research was to determine how environmental risks can be decreased and how the safety of personnel and property can be increased with offshore pipelines. This work shows how the objective can be achieved by a better material specification. When a marine pipeline is accidentally damaged by boat or ship anchor drag or by impact by fishermen trawl boards, the pipeline gets dented which can cause the line to collapse and then buckle with the buckle propagating down the line. In the process the line usually ruptures causing an oil spill or a gas leak. With a proper specification of the ultimate elongation of the steel, the pipe will stretch but not rupture during the collapse and buckling process.

Anticipated Results/Potential Commercial Applications of the Research

The Phase I results can be used now as rough guidelines. Phase 2 development work is needed to refine the procedures and for experimental confirmation of the theory. The anticipated results of the development work are that the oil, pipeline, and construction companies can use the procedures for improved steel pipe specification and DOI personnel can use the procedures for advice and counseling to industry. Implementation of the development work will result in safer pipelines and less environmental risk at no or negligible additional cost.

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