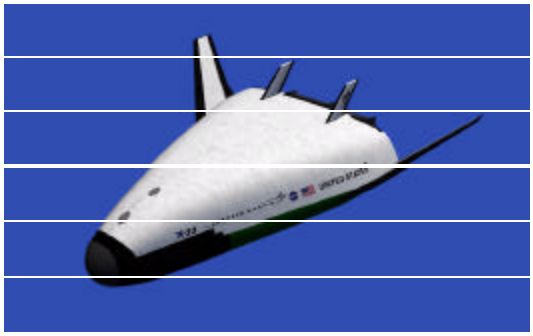
This document contains excerpts from the X-33 Independent Assessment Report (title page shown below). Only those sections which relate to the PBMA element **Concept Development** are displayed.

The complete report is available through the PBMA web site, Program Profile tab.

X-33

Safety & Mission Assurance Review



NASA Office of Safety & Mission Assurance

March 5, 1998

2.1 Concept

The X-33 Program will demonstrate the key design and operational aspects of a Single Stage to Orbit (SSTO) Reusable Launch Vehicle (RLV) rocket system to reduce the risk to the private sector in developing such a commercially viable system. The X-33 program will implement the National Space Transportation Policy, specifically Section III paragraph 2(a), which states: "The objective of NASA's technology development and demonstration effort is to support government and private sector decisions by the end of this decade on development of an operational next-generation reusable launch system."

This is being accomplished through a three-phase program. Phase I, which has been completed, was a 15-month competitive demonstration of critical technologies and included development of program plans for ground and flight demonstrations to be executed in Phase II. LMSW was selected as the single industry team to continue into Phase II. The next major decision point will be at the end of X-33 flight and ground tests when the government and industry will decide whether to enter Phase III, the development of the full-scale operational RLV.

The X-33 Advanced Technology Demonstrator represents a 53-percent scale model of the future Lockheed Martin Reusable Launch Vehicle, VentureStar. Through the Phase II ground and flight demonstrations, the X-33 will provide information necessary to allow the government-industry team to make a decision on whether to proceed in the development of the full-scale, commercial, single-stage-to-orbit RLV. If developed, the VentureStar would eventually replace the Space Shuttle as the next generation space transportation system. The goal is to lower costs from approximately $10,000 per pound down to near $1,000 per pound to low earth orbit.