APPENDIX IV

This appendix consists of 17 view-graphs that describes the NSF presentation.

NSF Strategic Plan

- "NSF in a Changing World"
- Major Themes

GEO Long-Range Plan - (FY1997-2001)

- Strategic Goals
- Strategic Goals (cont) and Financial Context
- High Priority Research Activities (OCE)
- High Priority Research Activities (OCE) (cont)
- High Priority Research-Based Education Activities
- High Priority Research-Based Education Activities (cont) and Financial Context
- High Priority Infrastructure Investments
- High Priority Infrastructure Investments (cont)
- High Priority Activities if Additional Funds

Oceanographic Centers & Facilities

NSF Ocean Sciences Division

- Budget - Page 1 and Page 2
- Facilities Planning (1997-2001)

House Appropriations Subcommittee - NSF FY 1997 - Draft Language
Senate Appropriations Committee - NSF FY 1997- Draft Language

NSF Strategic Plan
"NSF in a Changing World"

NSF Basic Mission and Purpose:

- "to promote the progress of science: to advance the national health, prosperity, and welfare; to secure the national defense..."
- Emphasis on excellence, merit review, fundamental research,
- Balance among small awards, large awards, facilities, and infrastructure,
- Importance of public investment in science and engineering, and,
- Fairness and stewardship of public funds.

NSF Strategic Plan
Major Themes

Emphasis on:

- Relating research to National Goals,
- Education of workforce and general public, as well as scientists and engineers,
- Integration of research and education,
- Interdisciplinary research,
- Partnerships with universities, other agencies, states and localities, other countries,
- Performance measurement and accountability,
- Increasing diversity, broadening the pool,
- Risk taking in making awards,
- Better service to proposers and the public.

GEO Long-Range Plan (FY1997-2001)

Strategic Goals:

- Advancement of fundamental knowledge about Earth Systems
  - respond to highest quality research opportunities
  - identify opportunities for focused support
- Enhancement of infrastructure for geoscience research
  - Facilities and instruments for large numbers of scientists
  - Partnerships - NSF, other agencies, institutions, international

GEO Long-Range Plan (FY1997-2001)

Strategic Goals (cont...):

- Improvement in quality of education and training
  - Education and training for current geoscientists and students
  - Future generations of geoscientists
  - Knowledge of Earth system by all people

Financial context:

- Budget levels comparable to fiscal years 1995/1996
- Possible reductions in geosciences support by other agencies
- Prioritization

GEO Long-Range Plan (FY1997-2001)

High-Priority Research Activities (OCE)

- Fundamental research supported by standing programs
  - Maintenance/enhancement of base program activities
- Major field and modeling programs for global change research
  - support for planned completion of major international field campaigns
    - WOCE
    - JGOFS
  - Modest increases in support for specific program elements
    - GLOBEC
    - Earth System History

GEO Long-Range Plan (FY1997-2001)

High-Priority Research Activities cont...(OCE)

- Special emphasis areas
  - Maintain support as needed for the Ocean Drilling Program
  - Increase support for:
    - » Environmental Geochemistry and Biogeochemistry (CGB)
    - » Coastal Ocean Processes (CoOP)
  - Initiate programs in:
    - » RIDGE Ocean-floor observatories
    - » Continental Margins research (MARGINS)
  - Financial context:
    - » Funds from planned phase-downs and reductions in some global change programs and other initiatives used for identified increases.

GEO Long-Range Plan (FY1997-2001)

High Priority Research-Based Education Activities

- Intensify efforts for more effective integration of research and education.
  - Dissemination of research results beyond scholarly journals.
  - Special activities to improve general education in geosciences.
  - Facilitate best education and training for future geoscientists from all segments of the population.
- Innovative activities linking geoscience researchers and educators to advance general and undergraduate geoscience education.
  - Emphasis on opportunities for students and general public to witness and participate in active research efforts.
  - Enhancement of roles of science and technology centers and research consortiums in outreach activities.

GEO Long-Range Plan (FY1997-2001)

High Priority Research-Based Education Activities (cont...)

- Focused programs to increase diversity in the geosciences community
  - Maintain support for REU sites with focus on underrepresented groups.
  - Expand diversity-enhancing activities at science and technology centers.
  - Increase opportunities for underrepresented groups to participate in geoscience research.
  - Continue involvement in MJE program with Universidad Metropolitana of Puerto Rico.
- Financial Context
  - Education activities are component of research activities.

GEO Long-Range Plan (FY1997-2001)

High Priority Infrastructure Investments

- Solid-earth science facilities
  - Increase in share of support for Global Seismic Network (GSN).
  - Maintain other activities e.g. synchrotron X-ray facility, AMS and ion microprobe facilities and UNAVCO global positioning systems.
- Atmospheric facilities
  - Maintain shared-use facilities, equipment, and computers at NCAR.
  - Balance research and facility support for incoherent scatter radar and other facilities.

GEO Long-Range Plan (FY1997-2001)

High Priority Infrastructure Investments (cont...)

- Academic research fleet
  - support operation of academic research fleet at levels that will enable scientific needs to be met.
  - Upgrade and replacement of vessels may be undertaken in conjunction with possible lay-up of vessels not needed at times.
- Financial context
  - Capital improvements and operations costs combined must stay within budget levels comparable to FY1995/96.

GEO Long-Range Plan (FY1997-2001)

High Priority Activities if Additional funds

- Construction of polar-cap observatory
  - Solar wind observations
- Construction or upgrade of vessels in the academic research fleet
  - All-season access to Arctic Ocean
  - Upgrading ocean drillship
  - Coastal research vessel
- Upgrades/replacement of research aircraft
- Expansion of computational capabilities at NCAR
- Enhancement of international cooperative research programs
  - International Geosphere Biosphere Programme
  - World Climate Research Programme
  - Next generation Ocean Drilling Program
- Financial context
  - Budget additions beyond Fiscal Years 1995/96 levels

Oceanographic Centers & Facilities

- Staff Change
  * Lisa Rom, Instrumentation and Technical Services (ITS)
    - one year leave. August 1996-August 1997
  * Sandy Shor, ITS Program Director
    - IPA, University of Hawaii, August 1996-August 1997

- Program Addition
  * Interamerican Institute (IAI)
  * Line budget in OCFS ($1.6M)
  * OCE "center" management
  * Global Change Program

- UNOLS Liaisons
  * Unols Council - Don Heinrichs
  * RVOC
  * Ship scheduling — Dolly Dieter
  * DESSC
  * RVTEC - Lisa Rom/Sandy Shor
  * FIC - Richard West
  * AICC - Don Heinrichs

NSF Ocean Sciences Division

Ocean Sciences

- Budget estimate is $193.7 Million
- Increase of $0.9 Million or .5%

	FY 1994	FY 1995	FY 1996
Ocean Sciences Research	$100.0 M	$102.6M	$104.9M
Oceanographic Centers & Facilities	50.3M	50.4M	48.9M
Ocean Drilling Program	38.7M	39.8M	39.9M
	$189.0M	$192.8M	$193.7M

- Major Research Initiatives

	FY 1994	FY 1995	FY 1996
Global Change Programs	$53.7M	$57.7M	$57.6M
Biotechnology	4.0M	3.6M	3.0M
High Performance Computing	0.4M	0.8M	0.8M
Environmental Research	7.3M	7.7M	7.3M
SMETE (EHR)	2.1M	2.9M	3.1M
	$67.5M	$72.7M	$71.8M

• Other Research Activities	$121.5M	$120.6M	$121.9M

(June 1996)

NSF Ocean Sciences Division

	FY 1994	FY 1995	FY 1996
Ocean Sciences Research	$100.0 M	$102.6M	$104.9M
Oceanographic Centers & Facilities	50.3M	50.4M	48.9M
Ocean Drilling Program	38.7M	39.8M	39.9M
	$189.0M	$192.8M	$193.7M
Oceanographic Facilities Detail			
Operations			
Ship Operations*	$32.2M	$35.1M	$31.1M
ALVIN, Aircraft, etc.	2.2M	2.1M	2.4M
Marine Techs	4.2M	4.4M	3.8M
	$38.6M	$41.6M	$37.3M
Infrastructure			
Science Instruments	2.5M	1.9M	1.9M
Shipboard Equipment	2.1M	1.1M	1.6M
Ships, Upgrades	2.1M	0.2M	1.5M
UNOLS, Misc.	0.5M	0.5M	0.3M
	$7.2M	$3.7M	$5.3M
Centers and Reserves			
AMS	1.2M	1.0M	1.4M
IAI	1.3M	2.0M	1.9M
Cross Directorate/Reserves	2.0M	2.1M	3.0M
	$4.5M	$5.1M	$6.3M

*Plus $1.6M from ODP (1994), $1.8M (1995), $2.1M (1996)

(June 1996)

NSF Ocean Sciences Division

Facilities Planning (1997-2001)

- Context of geosciences Long-Range Plan
  - Earth Sciences
  - Ocean Sciences
  - Atmospheric Sciences

- Financial Context
  - Budget levels comparable to fiscal years 1995/1996
  - Possible reductions in ocean sciences support by other agencies
  - Prioritization

- Academic Research Fleet planning
  - Support operation of academic research fleet at levels that will enable scientific needs to be met
  - Upgrades and replacements of vessels may be undertaken in conjunction with possible lay-up of vessels not needed at times
  - Capital improvements and operations costs combined must stay within budget levels comparable to FY1995/96

- Priorities if additional funds
  - All-season access to Arctic Ocean
  - Upgrading ocean drillship
  - Coastal research vessel

(June 1996)

HOUSE APPROPRIATIONS SUBCOMMITTEE
NSF FY1997 – DRAFT LANGUAGE

ACADEMIC RESEARCH FLEET

- Concern with possibility of adding new Navy-owned, university-operated, Class I Oceanographic Research vessel to academic fleet.
- No existing academic plan for new vessel at this time.
- Health of oceanography threatened by new ships without corresponding increases in ship operations and research funds.
- Support NSF efforts to work with other agencies to broaden usage of academic fleet.
- NSF to report on impact of possible Class I ship addition – fiscal and otherwise, balance between research and ship operations funding.

⇒ Report to Committee by August 30, 1996

file name: P:\heinrich\over-hds.doc

SENATE APPROPRIATIONS COMMITTEE
NSF FY1997 – DRAFT LANGUAGE

ACADEMIC RESEARCH FLEET

- Ocean sciences heavily dependent on seagoing facilities.
- Present mix of federally-owned, academically-operated ships cost more than funds available for operations.
- NSF to analyze most cost-effective means of operating the academic fleet.
  - Include need for gradual replacement of fleet.
  - Use whatever factors lead to maximum scientific results for the costs.
  - Factors may include benefits of fast, small SWATH research ship.

☛ Report to Committee by August 30, 1996