

SUPPLEMENTAL AGREEMENT
BETWEEN

THE TRUSTEES OF BOSTON COLLEGE
AND
THE U. S. NUCLEAR REGULATORY COMMISSION

THIS SUPPLEMENTAL AGREEMENT, effective the 1st day of July , 1980, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES NUCLEAR REGULATORY COMMISSION (hereinafter referred to as the "Commission"), and the Trustees of Boston College (hereinafter referred to as the "Contractor"),

WITNESSETH THAT:

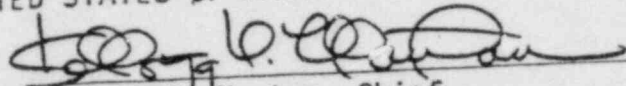
WHEREAS, the parties desire to modify Contract No. NRC- 04-76-291 as hereinafter provided, and this supplemental agreement is authorized by law, including the Energy Reorganization Act of 1974, as amended, and the Atomic Energy Act of 1954, as amended.

NOW, THEREFORE, said contract is hereby modified as follows:

1. Appendix A, attached to this supplemental agreement and made a part hereof, provides for the research to be performed by the Contractor during the contract period specified therein.
2. In Article II - The Period of Performance, the date " June 30, 1981 " is substituted for the date " June 30, 1980 " .
3. In Article III - Consideration, the sum "\$1,295,334.00" is substituted for the sum "\$1,120,334.00

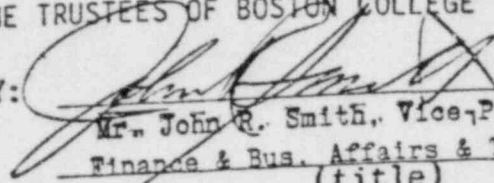
IN WITNESS WHEREOF, the parties have executed this document.

UNITED STATES OF AMERICA

BY: 
Kellogg V. Morton, Chief
Research Contracts Branch
(title)

Nuclear Regulatory Commission

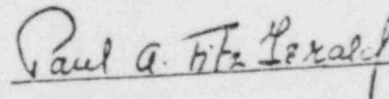
THE TRUSTEES OF BOSTON COLLEGE

BY: 
Mr. John R. Smith, Vice Pres. for
Finance & Bus. Affairs & Treasurer
(title)

I, Paul A. FitzGerald, certify that I am the
(attester)
Secretary of the University of the Contractor named
(title)
under this document; that John R. Smith
(signatory)

who signed this document on behalf of said Contractor was then
Vice President for Finance and Bus Affairs & Treas. of said Contractor; that
this document was duly signed for and on behalf of said Contractor by
authority of its governing body and is within the scope of its legal
powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of
said Contractor.



(SEAL)

CONTRACTOR: THE TRUSTEES OF BOSTON COLLEGE

APPENDIX A

For the Contract period July 1, 1980 through June 30, 1981

Article A-I RESEARCH TO BE PERFORMED BY CONTRACTOR

- (a) The unclassified scope of work under this contract entitled "A Seismotectonic Study of New England and Adjacent Areas", is as follows:

Continue investigation in the structure and tectonics of New England and adjacent areas and their relationship to the seismicity of the region. Integrate geological, geophysical, remote sensing and seismic data to provide as complete a picture of the seismotectonics of the area as is possible.

FY-1981 OBJECTIVES

1. Delineate faults and fault zones.
2. Determine age of faulting and if possible provide evidence of recent faulting.
3. Interpret geophysical and remote sensing lineaments.
4. Identify tectonic and seismotectonic provinces.
5. Identify seismotectonic features.
6. Identify possible earthquake mechanisms.
7. Conduct and complete all studies identified on Table 1.

Table 1

STUDIES PROPOSED FOR 1981.

1. Conduct microearthquake investigations in southern New England.
Principal Investigators: E.F. Chiburis and Staff,
Weston Observatory, Boston College.
2. Determine criteria for a preliminary seismotectonic map of the northeastern United States.
Principal Investigator: P. J. Barosh, Weston Observatory,
Boston College.
3. Perform investigation of the Northern Fall Line zone in northern Delaware and surrounding regions.
Principal Investigator: A. M. Thompson, University of Delaware.

4. Conduct brittle structure investigation of the northern Manhattan Prong region, Connecticut and New York.
Principal Investigator: J. E. Tillman, Johns Hopkins University.
5. Conduct preliminary study of possible fault displacements of Holocene age near Saratoga Springs, New York.
Principal Investigators: G. W. Putnam, J. R. Young, and H. T. Willems, State University of New York at Albany.
6. Conduct Lake George, New York, geophysical and field studies.
Principal Investigator: Y. W. Isachsen, New York Geological Survey.
7. Conduct detailed investigation of suspected Holocene fault movement in central Lake Champlain, Vermont.
Principal Investigators: A. S. Hunt, University of Vermont, and J. J. Dowling, University of Connecticut.
8. Conduct investigation of possible Holocene fault movement on South Hero Island, Lake Champlain, Vermont.
Principal Investigator: P. J. Barosh, Weston Observatory, Boston College.
9. Determine Analysis of fracture systems accompanying regional doming in the Adirondacks, New York.
Principal Investigator: Y. W. Isachsen, New York Geological Survey.
10. Conduct geological interpretation of aeromagnetic mapping in the Adirondacks, New York.
Principal Investigator: Y. W. Isachsen, New York Geological Survey.
11. Develop a dike map of the Adirondacks, New York.
Principal Investigator: Y. W. Isachsen, New York Geological Survey.
12. Conduct geophysical investigations on Long Island Sound, Connecticut and New York.
Principal Investigator: J. J. Dowling, University of Connecticut.
13. Determine the relationship of the Honey Hill and Boonemill Brook fault zones near Essex, Connecticut.
Principal Investigators: R. P. Wintsch, University of Indiana and S. S. Quarrier, Connecticut Geological Survey.
14. Conduct gravity investigations in the Narragansett Bay seismic area, Rhode Island and Massachusetts.
Principal Investigator: R. K. Frohlich, University of Rhode Island.
15. Conduct a structural study of the Casco Bay - Lower Androscoggin River area, Maine.
Principal Investigators: A. M. Hussey II, K. A. Pankiowskyj, and D. S. Newberg, Maine Geological Survey.

16. Conduct a structural study of the Dover-Foxcroft region, central Maine.
Principal Investigator: D. S. Westerman, Maine Geological Survey.
17. Conduct a gravity study of the southern part of the Penobscot Bay seismic area, Maine.
Principal Investigator: D. A. Tyler, University of Maine, Orono.
18. Conduct a structural study of the northern Penobscot Bay area, Maine.
Principal Investigator: C. L. Rogers, Segwich, Maine.
19. Conduct a gravity survey of the Passamaquoddy Bay seismic area, Maine and New Brunswick.
Principal Investigator: D. A. Tyler, University of Maine, Orono.

Conduct an investigation of Late Pleistocene and Holocene crustal warping along the Maine coast.
20. I. Conduct a saltmarsh investigation.
Principal Investigators: H. W. Borns, Jr., Smithsonian Institution.
R. Stuckenrath, Jr., Smithsonian Institution
21. II. Conduct a submerged mudflat investigation.
Principal Investigator: D. Sanger, University of Maine, Orono,
22. III. Conduct investigation for Holocene deformation in the Eastport-Calais area, Maine.
Principal Investigators: H. W. Borns, University of Maine, Orono, and
W. A. Anderson, Maine Geological Survey.
23. IV. Conduct an investigation of submerged and near submerged historical sites.
Principal Investigator: D. Smith, University of Maine, Orono.
24. V. Conduct an investigation of elevated Late Pleistocene-Early Holocene shoreline deposits.
Principal Investigators: W. B. Thompson and W. A. Anderson,
Maine Geological Survey.
25. Conduct a structural study of the Maine portion of the Sherbrooke 2-degree sheet.
Principal Investigator: G. M. Boone, Maine Geological Survey.
26. Develop tectonic map of the northeastern United States and adjacent Canada.
Principal Investigator: P. J. Barosh, Weston Observatory, Boston College.
27. Determine the mesozoic and tertiary history of offshore New England.
Principal Investigator: P. J. Barosh, Weston Observatory, Boston College.
28. Conduct dating and tectonic analysis of Late Jurassic and younger dikes of New England.
Principal Investigator: Jelle de Boer, Wesleyan University.

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- (b) The Principal Investigator expects to devote the following approximate amount(s) of time to the contract work:
Patrick J. Barosh - 100% of his time for the 12 month contract period.

ARTICLE A-II WAYS AND MEANS OF PERFORMANCE

- (a) Items for which support will be provided as indicated in A-III, below
- | | |
|---|---------------------|
| (1) Salaries and Wages | \$ <u>68,300.00</u> |
| (2) Equipment to be purchased or fabricated by the Contractor | \$ <u>- 0 -</u> |
| (3) Travel | |
| (i) Domestic | \$ <u>16,000.00</u> |
| (ii) Foreign | \$ <u>- 0 -</u> |
| (4) Other direct costs including fringe benefits. | |
| (5) Indirect costs based on a predetermined rate of 72 percent applicable to salaries and wages | |
- (b) Items, if any, significant to the performance of this contract, but excluded from computation of Support Cost and from consideration in proportioning costs:
NONE
- (c) Time or effort of Principal Investigator(s) including indirect costs and fringe benefits contributed by Contractor but excluded from computation of Support Cost and from consideration in proportioning costs:
NONE

Article A-III

The total estimated cost of items under A-II(a) above for the contract period stated in this Appendix A is \$366,223.00 ; the Commission will pay 100 percent of the actual costs of these items incurred during the contract period stated in this Appendix A, subject to the provisions of Article III and Article B-XXVIII. The estimated NRC Support Cost for the contract period stated in this Appendix A is \$366,223.00 .

The estimated NRC Support Cost is funded as follows:

- | | |
|---|----------------------|
| (a) Estimated unexpanded balance from prior period(s) | \$ - 0 = |
| (b) New funds for the current period | \$ <u>175,000.00</u> |
| (c) Funds to be provided in FY 1981, subject to their availability | \$ <u>191,223.00</u> |
| (d) The new funds being added in A-III(b) constitute the basis for advance payments provided under Article B-X. | |

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