

SUPPLEMENTAL AGREEMENT
BETWEEN
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
AND
THE U. S. NUCLEAR REGULATORY COMMISSION

THIS SUPPLEMENTAL AGREEMENT, effective the 1st day of May , 1979, 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 MASSACHUSETTS INSTITUTE OF TECHNOLOGY (hereinafter referred to as the "Contractor"),

WITNESSETH THAT:

WHEREAS, the parties desire to modify Contract No. NRC-04-76-209 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 "April 30, 1980" is substituted for the date "April 30, 1979".
3. In Article III - Consideration, the sum "\$306,680.00" is substituted for the sum "\$ 207,030.00".

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IN WITNESS WHEREOF, the parties have executed this document.

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UNITED STATES OF AMERICA

BY:

[Signature]
Kellogg V. Morton, Chief
Research Contracts Branch
(title)

Nuclear Regulatory Commission

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

BY:

[Signature]
Philip J. Keohan, Comptroller
(title)

APPROVED
[Signature]

I, C. B. Simonides, certify that I am the
(attester)
Secretary of the Executive
Committee of the Corporation of the Contractor named
(title)

under this document; that Philip J. Keohan
(signatory)

who signed this document on behalf of said Contractor was then
Comptroller 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)

[Signature]
C. B. Simonides

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Modification No. 5
Supplemental Agreement to
Contract No. NRC-04-76-209

CONTRACTOR: MASSACHUSETTS INSTITUTE OF TECHNOLOGY

APPENDIX A

For the Contract period May 1, 1979 through April 30, 1980

Article A-I RESEARCH TO BE PERFORMED BY CONTRACTOR

(a) The unclassified scope of work under this contract entitled, "A Study of New England Seismicity with Emphasis on Massachusetts and New Hampshire" shall be as follows:

- 1) To continue the operation of the M.I.T. Seismic Network and significantly upgrade the quality of the data. This will include the replacement of all telemetry components and the inclusion of automatic calibration units at each site. Some of the data will be recorded digitally on the HP-1000 computer. Install a seismic station in a deep borehole on Nantucket Island.
- 2) To determine the crust and upper mantle structure from seismic refraction experiments, teleseismic P-wave residual inversion, and surface wave dispersion analysis. This will improve the computation of local earthquake hypocenters.
- 3) To determine fault plane solutions for local earthquakes and thus determine the state of stress within the crust.
- 4) To determine an earthquake magnitude scale for New England based on total signal duration.
- 5) To estimate local variations of strong ground motion using the data from small earthquakes.

(b) The Principal Investigator expects to devote the following approximate amount(s) of time to the contract work:

M. N. Toksoz: 5% of his time for 12 months

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

\$ 38,650.00

1064 280

- (2) Equipment to be purchased or
fabricated by the Contractor

\$ 14,660.00

Items Under \$1000.00

S-500 SP Seismometer

Items Over \$1,000.00

Geotech portacorder including microprocessor
controlled timing unit

Magnetic tape drive

Phase encoded may tape subsystem
Model 7970E+230, 1600 BPI, 45 ips
A/D converter interface, model 91000A

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- (3) Travel

(i) Domestic

\$ 2,300.00

(ii) Foreign

\$ -0-

- (4) Other direct costs including fringe benefits

- (5) Indirect costs based on a predetermined rate of 67 percent applicable
to salaries and wages and benefits excluding half of research assistants
and all UROP student salaries for the period May 1, 1979 - June 30, 1979
and 68.3% percent applicable to salaries and wages and benefits excluding
half of research assistants and all UROP student salaries for the period
July 1, 1979 - April 30, 1980.

- (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 com-
putation of Support Cost and from consideration in proportioning
costs:

NONE

1064 281

Article A-III

The total estimated cost of items under A-II(a) above for the contract period stated in this Appendix A is \$99,650.00 ; 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 \$99,650.00 .

The estimated NRC Support Cost is funded as follows:

- | | |
|---|---------------------|
| (a) Estimated unexpended balance from prior period(s) | \$ <u>-0-</u> |
| (b) New funds for the current period | \$ <u>99,650.00</u> |
| (c) The new funds being added in A-III(b) constitute the basis for advance payments provided under Article B-X. | |

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