

**PROJECT ANNEX 1**  
  
to the  
**MEMORANDUM OF UNDERSTANDING**  
between the  
**CHINA EARTHQUAKE ADMINISTRATION  
OF THE PEOPLE'S REPUBLIC OF CHINA**  
and the  
**GEOLOGICAL SURVEY OF CANADA, DEPARTMENT OF  
NATURAL RESOURCES, CANADA**

**Title: Investigation of Earthquake Precursors**

The China Earthquake Administration (hereinafter referred to as "CEA"), formerly the China Seismological Bureau ("CSB"), and the Geological Survey of Canada of the Department of Natural Resources Canada (hereinafter referred to as "GSC") hereby agree to cooperate in activities set forth in this Project Annex (hereinafter referred to as "PA") pursuant to and subject to the Memorandum of Understanding signed by the CSB and the GSC in Beijing on October 14<sup>th</sup>, 2002.

**I. SCOPE**

To review and understand natural phenomena that accompany earthquakes and advance our knowledge of the physical processes associated with earthquakes.

**II. OBJECTIVE**

To investigate geophysical, geological, and other signals that may be considered precursors of previous earthquakes and explore potential methods of detecting these signals.

**III. PROJECT COORDINATION**

A. GSC participation:

The responsible unit shall be the Pacific Division, and the GSC Project Coordinator shall be Dr. Kelin Wang or other designated official.

B. CEA participation:

The responsible unit shall be the Institute of Earthquake Prediction, CEA, and the CEA Project Coordinator shall be Prof. Chen Qi-fu or other designated official.

**IV. WORK PLAN**

The CEA and the GSC (hereinafter referred to as the "Parties") plan to pursue the following activities in the next three years.

A. Review precursors of the successfully predicted 1975 Haicheng earthquake and the decision making process for the pre-event warning issuance.

B. Review precursors of the recent earthquakes in China for which warning was issued prior to the events.

C. Mutual visits by scientists to exchange information on monitoring and study of interseismic and preseismic geophysical and geological signals.

D. Identify the most useful means of precursor observations and organize joint visits and on-site workshops by CEA and GSC scientists at monitoring facilities in both countries.

#### **V. FUNDING ARRANGEMENTS**

A. Subject to Canadian and Chinese laws and regulations, and the availability of funds, each sending Party shall provide funds to cover expenses of each visiting scientist for traveling and living costs and each sending Party shall continue to pay the salary of each visiting scientist for the duration of the visit.

B. Medical expenses will be covered by an insurance policy contracted by each visiting scientist or by the sending Party.

C. Where appropriate, each Party shall provide research facilities and assistance (for example, related to customs) for visiting scientists.

D. No cost incurred by one Party shall be assumed by the other unless otherwise agreed to in writing.

#### **VI. ADMINISTRATIVE ARRANGEMENTS GOVERNING GSC AND CEA PERSONNEL**

A. The Parties shall assign personnel to activities under this PA in accordance with applicable laws, regulations, and policies of their respective countries.

B. Changes or modifications to the PA shall be by written document and signed by both Parties.

C. Upon request of either Party regarding any matter relating to the terms of the PA, the Parties will endeavor to resolve any problem or misunderstanding by consultation in a spirit of mutual cooperation and trust.

#### **VII. OWNERSHIP OF INTELLECTUAL PROPERTY**

GSC and CEA shall retain all rights and title to their existing proprietary knowledge and Intellectual Property that they bring to the activities conducted under this PA. Intellectual Property arising out of or resulting from activities conducted under this PA shall be jointly owned by the Parties.

For the purposes of activities conducted under this PA, Intellectual Property refers to all rights in any information including, without limitation, data, techniques, methods, processes, know-how, inventions, designs, formulae, photographs, drawings, plans, specifications, reports, studies, technical and procedural manuals and computer programs, and all patents, copyrights, trademarks, and industrial designs arising there from.

#### **VIII. PUBLICATIONS AND COMMUNICATIONS RELATED TO PROJECT RESULTS**

Publications and public communications related to activities carried out under this PA shall be made in a spirit of collaboration, with consultation and participation if possible, by the Parties. All publications and public communications relating to such activities shall acknowledge the contribution of the GSC and CEA.

## **IX. TITLE TO PROPERTY**

Any property or equipment of whatever nature or kind furnished by any Party in connection with work under this PA is and will remain the property of the Party furnishing such property or equipment.

## **X. INDEMNIFICATION AND LIABILITY**

A. CEA shall indemnify and save harmless GSC and Her Ministers, officers, employees and agents from and against all claims, demands, losses, costs including lawyers fees, damages, actions, suits or proceedings, that are in any manner based upon, arising out of, or attributable to any negligent acts or omissions or wilful misconduct of CEA or its employees and agents, except to the extent caused by a breach of duty of the GSC. CEA shall have the right to defend any such action or proceeding with counsel of its own choosing.

B. GSC shall indemnify and save harmless CEA and Her Ministers, officers, employees and agents from and against all claims, demands, losses, costs including lawyers fees, damages, actions, suits or proceedings, that are in any manner based upon, arising out of, or attributable to any negligent acts or omissions or wilful misconduct of the GSC or its employees and agents, except to the extent caused by a breach of duty of the CEA. GSC shall have the right to defend any such action or proceeding with counsel of its own choosing.

C. GSC shall not be liable in any way for loss of profits or contracts, or any other consequential loss of any kind relating to activities conducted under this PA.

D. CEA shall not be liable in any way for loss of profits or contracts, or any other consequential loss of any kind relating to activities conducted under this PA.

## **XI. DURATION OF THE PROJECT**

This PA will become effective upon signature by both Parties, and will remain in effect for three (3) years. It may be extended with the mutual written consent of the Parties and may be terminated by either Party upon ninety (90) days written notice to the other Party.

Signed in Beijing on the 18th day of November, 2004.

Accepted on Behalf of the GSC by:

Accepted on Behalf of the CEA by:

Dr. Irwin Itzkovitch  
Assistant Deputy Minister  
Earth Sciences Sector  
Department of Natural Resources Canada

Prof. Tang Quan  
Deputy-Director-General  
China Earthquake Administration