

## A suggestion on prediction of very large eruptions and volcano monitoring from the Volcanological Society of Japan

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### 1. Background

Some of members of the Volcanological Society of Japan (VSJ) have been involved directly or indirectly in disaster measures of national and local governments, evaluation of volcanic activity and nuclear energy as a matter of duty or experts. Related to the 2009 L'Aquila Earthquake in Italy, scientists including a volcanologist involved in a national committee were indicted for the responsibility of victims due to their misjudgment. This event urged scientists to reconsider how scientists should have to do with society and administrative problems. In Japan, the Cabinet Office, Government of Japan (CAO) issued "A suggestion on the disaster measures for large volcanic eruption" in May 2013. In June 2013, the Nuclear Regulation Authority (NRA) issued "Guide on the evaluation of influence/impact of volcanoes on nuclear power plants". The guide demands enterprises of nuclear power generation to do volcano monitoring and to get advices of volcanologists in evaluation of volcanic activity: whether very large eruption, which may impact on nuclear power plants, occurs or not. To exchange information and opinion on problems of nuclear power plants and very large eruptions, VSJ set up the committee on problems related to nuclear energy. The committee summarized results of discussion as "A suggestion on prediction of very large eruptions and volcano monitoring" and presented it at the general meeting of VSJ in November 2014. The suggestion is placed in Home Page of VSJ to let members of VSJ know it and to inform of society of the suggestion of VSJ.

### 2. Main issues of discussion and suggestion

The committee discussed problems related to very large eruptions and nuclear energy, those are, the guide of NRA, the suggestion of CAO, eruption alert operated by Japan Meteorological Agency (JMA), and opinion and information from the members of committee.

The Guide of NRA supposes that signs of very large eruption is detectable by volcano monitoring and necessary operation on atomic reactors is completed before eruption. This is opposed to the suggestion of CAO: the research on the prediction of very large eruptions and disaster measures has not initiated. In addition, the guide had made without discussion with CAO and JMA. Problems related very large eruptions including nuclear energy should be discussed at some meetings in which the government offices participate. The results of discussion are expected to be reflected to the safety measures of nuclear power plants and so on.

Volcanologists should explain the present status on the prediction of eruptions by volcano monitoring including possibility, limitation and uncertainty to the publics and the government offices concerned.

Research on prediction of very large eruptions and disaster measures is an important subject of VSJ and Japan, and should be promoted. The results should be applied to eruption alert level by JMA and the guide on nuclear power plants.

Keywords: very large eruption, nuclear power plant