NATIONAL COMMISSIONER OF THE ICELANDIC POLICE

DEPARTMENT OF CIVIL PROTECTION AND EMERGENCY MANAGEMENT

STATUS REPORT FROM THE NATIONAL CRISIS COORDINATION CENTRE

Date: 04.09.2014 at 1600	**Regarding: Volcanic Eruption north of Vatnajökull, in Holuhraun**

Main Points:

- Ongoing lava eruption in Holuhraun .
- Still seismic activity
- Risk assessment - Four likely scenarios
- Restricted area North of Vatnajökull

Volcanic and Seismic Activity:

The intensity of the ongoing eruption in Holuhraun is not declining. Lava is flowing toward ENE and it has been elongated considerably since yesterday. Since this morning, a preliminary estimate of lava field extension is about 11 km^2.

Seismic activity is still detected in the northern part of the dyke intrusion, along the eruption site and extending south below Dyngjujökull. Event rates are lower than in recent days, 180 earthquakes have been detected since midnight until noon. Four events larger than M4 have been detected in Bárðarbunga caldera. The largest one (M4.8) occurred last night at 03:09.

The low frequency tremor seen yesterday disappeared last night but started again this morning, however minor compared to yesterday. The source of the tremor is not certain however possible explanation could be magma-water interaction although this interpretation has currently not been confirmed by other observations.
There are no signs of a subglacial eruption under Dyngjujökull. No obvious changes such as increased water flow or cauldrons on the glacier surface were observed from scientists on board TF-SIF yesterday. Water meters in Jökulsá á Fjöllum do not show any unusual changes in discharge and electric conductivity.

The GPS time series indicate slower rate of deformation in the last 24 hours. The current deformation pattern north of Vatnajökull still suggests volume increase in the dyke. No significant signs of deformation are observed around Bárðarbunga.

There have been no observations of ash-fall away from the eruption site. Ash production is negligible.

Based on radar images the eruption cloud from today (composed of steam and volcanic gases) has not drifted far away and is mostly concentrated around the eruption site. Stations measuring SO_2 further away from the eruption site are showing concentration below health and safety thresholds. Since this morning, the cloud reaches 6 km of altitude. The volcanic cloud will drift towards south in the coming hours due to wind rotation.

Precautionary measures:

Sulphur dioxide emission continues. Low-wind speed condition is present in the area at the moment. People could be exposed to highly dangerous gas levels close to the eruption. It is essential that those working near the eruption site are equipped with gas sensors and gas masks. The Administration of Occupational Safety and Health stresses that it is crucial for all institution and companies working in the area to conduct a risk assessment and response plans according to regulation (nr. 920/2006)

In light of GPS, radar and seismic results, it is possible that the ongoing eruption could progress southward under Dyngjujökull. This would lead to immediate flooding hazards on the floodplain in front of Dyngjujökull. Consequently, risk assessments for scientists working in the area are periodically assessed.
Yesterday, The District Commissioner in Husavik decided to further restrict access to the eruption site northwest of Vatnajökull glacier, due to increased tremor at the eruption site in Holuhraun. The restrictions were lifted this

morning. The media and scientists have been given limited access with special permissions into the area, subject to certain terms and conditions.

The road to Dettifoss on the West side of Jökulsá á Fjöllum (No 862) has been opened for traffic from the Ringroad to the Dettifoss waterfall. Other roads on the west side are still closed, including hiking trails. The decision is based on the Civil Protection risk reduction measures, increased surveillance of the Vatnajökull National Park rangers, increased scientific monitoring as well as additional law enforcement. The decision does not in any way indicate less flood risk, only increased mitigation and surveillance.

All roads leading to the volcanic site are closed based on the risk of a flood if an eruption will start under the glacier. Information on closures can be found on the Icelandic Road and Coastal Administration web page http://www.vegagerdin.is/media/umferd-og-faerd/Halendi.pdf

The Aviation Colour Code for Bárðarbunga remains at 'orange' and the code for Askja at 'yellow.

Risk assessment

It remains unclear how the situation will develop. Four scenarios are considered most likely:

- The migration of magma could stop, resulting in a gradual reduction in seismic activity and no further eruptions.
- The dyke could reach the Earth's surface causing another eruption, possibly on a new fissure. Lava flow and (or) explosive activity cannot be excluded.
- The intrusion reaches the surface and another eruption occurs where either the fissure is partly or entirely beneath Dyngjujökull. This would most likely produce a flood in Jökulsá á Fjöllum and perhaps explosive, ash-producing activity.
- An eruption in Bárðarbunga. The eruption could cause an outburst flood and possibly an explosive, ash-producing activity. In the event of a subglacial eruption, it is most likely that flooding would affect Jökulsá á Fjöllum. However it is not possible to exclude the following flood paths: Skjálfandafljót, Kaldakvísl, Skaftá and Grímsvötn.

Other scenarios cannot be excluded.

Risk of floods:

There is still a risk of flood in the area. This is based on the fact that an eruption may begin under the Vatnajökull glacier, either in Dyngjujökull or the Bárðarbunga caldera. The active fissure in Holuhraun may also open to the south and reach Dyngjujökull glacier.

Cooperation and coordination:

The coordination of the operation and information continues at the National Crisis Coordination Center (NCCC). This morning there was a meeting with the Icelandic Civil Protection Scientific Advisory Board. After the meeting a teleconference was held with District Commissioner in Húsavik to coordinate measures. A meeting was held with the Chief Epidemiologist for Iceland at the Directorate of Health that is responsible for measures during volcanic eruptions to prevent exposure to ash and gas. Also at the meeting were representatives from the Environmental Agency, the Icelandic Food and Veterinary Authority, the Earth Science Institute, the Met Office. Also, the NCCC is coordinating measures with Vatnajökull National Park regarding traffic, access control points and environmental protection.

Tourist information

Most roads in Iceland are open and accessible including the Ring road (nr. 1) around Iceland and safe for travelling. However, due to volcanic eruption in the area north of Vatnajökull glacier, the highland north of Vatnajökull glacier is

closed for all traffic. The eruption site is about 120 km south of road nr. 1 in the northeast Iceland and there has been no ashfall reported. All airports are open in Iceland.

Information:

A media unit is placed at the National Crisis Coordination Center, providing information and dealing with media requests. The email address is info@sst.is Tel: +354-5702644/43. The website on safe travel in Iceland is updated regularly: www.safetravel.is

National Commissioner of the Icelandic Police Department of Civil Protection and Emergency Management:
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