

Regeringarna i Georgien och i Armenien har anhållit om bistånd hos FN för att få möjlighet att förebygga risken för katastrof om ras skulle inträffa vid två dammanläggningar. Undersökningar gjordes i syfte att bedöma den överhängande faran om ras skulle uppstå vid någon av de båda dammarna och för att planera vilka åtgärder som skulle bli nödvändiga för att förhindra en katastrof. Undersökningarna resulterade i två rapporter, av vilka innehållet har summerats i detta häfte.

Summary

In order to avoid the risk of a disaster situation arising as a consequence of a dam break at the Inguri Dam in Georgia or at the Marmarik Dam in Armenia, the governments of both republics have submitted an application for aid to the UN Department of Humanitarian Affairs (DHA) in order to rectify this state of affairs.

At the request of the DHA, synoptic inspections of both dams were carried out in order to determine the actual situation and form an opinion on what action should be taken.

Following a recommendation presented by the Swedish Rescue Services Agency, a Mr Ragnar Werner, a graduate engineer and consultant in hydraulic engineering, performed these inspections. On-site inspections were carried out during the period 12th – 17th June, 1997 in Georgia and during the period 18th – 23rd June, 1997 in Armenia. This was a joint undertaking commissioned by two organisations in the UN, the UNEP and the DHA.

An account of the results was given in two reports, the contents of which are summarised below:

The Inguri Dam is an arch dam made of concrete. Being 272 m in height, it is one of the largest dams in the world. Virtually no maintenance has been carried out on the dam in the last ten years and certain equipment was even damaged during hostilities that took place in 1994. A serious break in the dam would bring about a catastrophe of enormous proportions for the densely populated valley downstream of the dam.

As the actual body of the dam is constructed of concrete which is, presumably, of satisfactory quality, there is no immediate risk of a serious break. On the other hand, the bedrock on which the dam is built is a different matter and is showing significant weaknesses. A steadily, increasing leakage of water through the ground in combination with subsidence have made expeditious reparations imperative. This also applies to the faulty discharge devices which, at present, do not allow a sufficiently safe regulation of the water level in the larger reservoir.

At the time of the visit, it was seen that renovation work, financed by Switzerland, had already begun. Furthermore, the European Bank for Reconstruction and Development (EBRD) has financed a feasibility study in order to clarify the need for renovation. This is to have been completed by October, 1997.

The Marmarik Dam is a 64 m high earth-fill dam. It was constructed during the period 1969-74. Shortly after its completion, the dam was damaged by a landslide. The top 14 m of about a third of its length dislodged and fell out on the downstream side of the dam. This, of course, lowered the height of the dam by 14 m. No measures have yet been taken to repair the damage. During the time of construction, water was channelled past the work site by means of a diversion tunnel. This is still the case today. The reservoir has therefore never been filled and has remained completely "dry".

There are fears that, sooner or later, high water levels following a downpour will overtax the tunnel. Moreover, there is a distinct possibility that part of the tunnel has collapsed and, at present, an inspection of the tunnel is not practicable. An inadequate discharge would lead to an uncontrolled rising of the level of water that would finally result in the water flowing over the top of the dam. Should this scenario take place then it would not be long before the dam itself would be washed away. A tidal wave would then travel down the valley with catastrophic effects on the population and buildings downstream of the dam.

However, the risk of a break is considered small as water pressure on the dam is considered insignificant. Furthermore, a risk situation could easily be avoided by the use of simple means, even in the event of a high flow situation. Obviously, the tunnel should be inspected and this would be quite feasible by employing reasonable procedures.

Planning a reconstruction of the entire plant, financed by international aid, is recommended and should be carried out without further delay.