



UNECE



Training seminar report
«Building capacity of national experts to ensure safety of hyrotechnical installation» of the
Central Asian water sector at the International training center for the safety of hyrotechnical
constructions

Taraz city

October 16-18, 2018

The presence in Central Asian countries of a large number of hyrotechnical constructions (HTC), which have a long service life and significant moral and physical deterioration, leads to an increase in the likelihood of emergency situations and accidents on them.

It should be noted that the main causes of accidents at the HTC are a low level of operation, poor technical condition and defects during their construction, insufficient assessment of the hydrological situation when passing floods, etc. In addition, there are unresolved issues on the regulatory framework and the provision of qualified personnel to the water sector.

In the countries of Central Asia, there is an acute need for the constant strengthening of human resources, i.e. along with a set of social support measures for the sustainability of staff, a continuous process is needed to improve the knowledge and skills of interested government officials and employees of water management organizations.

Since 2012, the International training center for the safety of hyrotechnical constructions (ITC) with the support of the United Nations Economic Commission for Europe (UNECE) and the Executive Directorate of the International Fund for Saving the Aral Sea in the Republic of Kazakhstan (ED IFAS in RK) has been working to improve the qualifications of water industry specialists in Central Asia in the field of safety of hyrotechnical constructions (table).

Table - ITC activity indicators

№	Date	Number of participants						Total	Certificates issued
		CWR MA RK*	CES MIA RK**	Kyrgyzstan	Tajikistan	Uzbekistan	Вузы, НИИ и др.		
1	February 2013	5	1	3		-	19	28	14
2	April, may 2014	20	1	4		-	29	54	34
3	June, october 2015	26	-	-		-	34	60	36
4	June, september 2016	44	-	2	2	-	6	54	54
5	June, october 2017	54	-	3	2	-	9	68	68
6	October 2018	5	-	4	2	3	12	26	26
	Total	154	2	16	6	3	106	290	232

* - Committee on Water Resources of the Ministry of Agriculture of the Republic of Kazakhstan

** - Committee for emergency situations of the Ministry of internal affairs of the Republic of Kazakhstan

The training seminar “Capacity Building of National Experts for Ensuring the Safety of Hydraulic Structures” of the water sector of the countries of Central Asia was held on November 16-

18, 2018 in Taraz, Kazakhstan. This event was organized and held with the financial support of the UNECE, in cooperation with the ITC at the Kazakh scientific research Institute of water management (KazSRIWM) and the ED IFAS in RK.

The seminar was attended by representatives of the Institute of water problems, hydropower and ecology of the Academy of sciences (Dushanbe city), State supervision service for the security of the HTC of the Republic of Tajikistan, the State inspectorate "Gosvodkhoznadzor" and the Diagnostic center of the Expert council of the State inspection "Gosvodkhoznadzor" under the Ministry of emergency situations of the Republic of Uzbekistan, the Department of operation of large HTC of the Ministry of water management of the Republic of Uzbekistan, the water management organizations of the Kyrgyz Republic, the UNECE project, the Water basin inspections (WBS) and the Republican state enterprise (RSE) "Kazvodhoz" CWR MA RK, ED IFAS in RK, KazSRIWM, Production cooperatives (PC) "Institute Kazgiprovodkhoz", Limited liability partnership "Project institute Kazgiprovodkhoz", Kazakh national agrarian university, Taraz state university named after M.Kh. Dulati (TarSU) (Annex 1).

The seminars were opened by Mr. N. N. Balgabayev. - Director General of KazSRIWM, who noted that one of the most important current water management issues is the issue of advanced training of water sector specialists, which is addressed by the ITC. The delegation of the Kyrgyz Republic was represented by Ch. M. Uzakbayev. - an international expert in the field of safety of hydrotechnical constructions (Figure 1).



Figure 1 - Balgabayev N.N. and Uzakbayev Ch.M. welcome participants of the workshop on safety of hydrotechnical constructions

The seminar was held according to the developed program agreed with the UNECE (Annex 2). Lectures were delivered by international experts on the safety of hydraulic structures from the Republic of Uzbekistan, the Republic of Tajikistan, the Kyrgyz Republic, national expert on the designing HTC of PC "Institute Kazgiprovodkhoz", specialists from KazSRIWM and RSE "Kazvodhoz", teachers of TarSU. Within 3 days, 17 lectures were read, visited the Talas hydrotechnical unit, the Ters-Ashchibulak reservoir, the laboratories of KazSRIWM and the TarSU.

A keen conversation took place on the issues of improving the qualifications of water specialists of the Central Asian countries in the field of safety HTC and features of holding seminars on safety HTC (Figure 2).

The workshop participants familiarized themselves with presentations by lecturers on the issues of the State supervision system for safety HTC, the basics of regulatory and legal regulation of safety HTC, control systems and monitoring of technical condition and safety HTC, accidents and emergency situations on HTC, etc. (Figure 3).



Figure 2 - Discussion of the issues of advanced training of specialists in the water industry



Figure 3 - At the HTC safety workshop

International expert Talipov S.G. familiarized the participants of the seminar with international experience of regulatory regulation of safety of hydraulic structures, problems of environmental safety of hydraulic structures, methods of controlling silting of the reservoir thicket, etc. (Figure 4).



Figure 4 - The current safety issues of the HTC were introduced by Talipov Sh.G.

Head of the Laboratory of water resources and hydrophysical processes of the Academy of sciences of Tajikistan Fazilov AR presented the presentations “Legislative, regulatory and methodological basis for the safety of HTC in Tajikistan”, “System of state supervision over the safety of HTC in the Republic of Tajikistan”, etc. (Figure 5).



Figure 5 - Fazilov A.R. presented topical issues of safety of HTC in Tajikistan

International expert Uzakbayev Ch.M. He disclosed the issues of ensuring the safety of HTC in the Kyrgyz Republic, the specifics of the operation of the Toktogul reservoir (Figure 6).



Figure 6 - Issues of ensuring the safety of HTC in the Kyrgyz Republic are disclosed by Uzakbayev Ch.M.

National expert Alibayev K.U. familiarized the seminar participants with the organization of observations of the technical condition of the earth dam, analysis of the causes of accidents on earth dams and other relevant issues of ensuring the safety of HTC, conclusions and recommendations (Figure 7).



Figure 7 - Alibayev KU lectures on the organization of observations of the technical condition of the earth dam

The representative of the UNECE project Orolbayev E.E. made a presentation “Dam Safety in Central Asia: Capacity Building and Regional Cooperation” with development results and directions (Figure 8).



Figure 8 - Orolbayev E.E. introduces the implementation of the international project "Dam Safety in Central Asia"

Mirdadayev MS and specialists from KazSRIWM introduced the seminar participants to the developments of the institute (Figure 9).

Teachers TarSU named after M.Kh. Dulati told in detail about modern methods of laboratory research of CTA (Figure 10).



Figure 9 - Mirdadayev MS represents the laboratories of KazSRIWM



Figure 10 - In the laboratory of Taraz State University named after M.Kh. Dulati

Seminar participants took photos on the entrance KazSRIWM (Figure 11).



Figure 11 - In KazSRIWM

The workshop participants visited the Talas hydrotechnical unit and the Ters-Ashchibulak reservoir, where they were able to practically familiarize themselves with the peculiarities of the structures of the HTC, learn more about the problematic issues of operation and equipment with instruments and equipment (figures 12, 13). A computer class for teaching automation of water intake facilities was presented at the Talas hydrotechnical units; dispatch center for water level and flow metering, control of hydrotechnical unit gates.



Figure 12 - Features of the automation of the Talas hydrotechnical unit was explained by Userbayev A.G.



Figure 13 - At the Ters-Ashchibulak reservoir

At the final meeting, the students of the ITC seminar were solemnly presented with certificates that they had successfully completed a refresher course on the safety of HTC (Figure 14).



Figure 14 - Certificates handing

In conclusion, the results and proposals on the work of the seminar are discussed.

Comments and suggestions

1 The relevance of the chosen topic and the relevance of the work of the seminar to the selected topic:

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Generalized comments and recommendations:

- capacity building of national specialists to ensure the safety of hydrotechnical constructions is extremely important

- It is necessary to conduct similar seminars on a regular basis with a wider representation of participants from Central Asian countries;

- It is recommended to expand the topics of the seminars with the best practices in the safety of HTC;

- • Pay more attention to the demonstration of modern technical means of monitoring the state of the HTC, especially in natural conditions..

2 The content of the reports and the visibility of presentations

Generalized comments and recommendations:

The reports are quite informative and well presented in the form of presentations and demonstration films..

3 Seminar organization

Generalized comments and recommendations:

The seminar was held at a high level with good provision with everything necessary for the fruitful work of the participants.



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LIST
of the participants of the training session «Building capacity of national experts to ensure safety of hydrotechnical installation» of the water industry of the countries of Central Asia
October 16-18, 2018, Taraz city

№	Name	Organization, position	Contacts
The Republic of Tajikistan			
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PROGRAM

of the training session «Building capacity of national experts to ensure safety of hydrotechnical installation» of the water industry in Central Asia

Taraz city, st. Koigeldy 12, KazSRIWM

"16 - 18" October 2018

International training center for the safety of hydrotechnical constructions (ITC)

The first day, october 16	
9:00-9:20	Registration of participants
9:20-9:30	Greeting: Balgabayev N.N. General director of KazSRIWM Uzakbayev Ch.M. International expert
9:30-10:00	Ecological safety of hydrotechnical constructions Lecturer - Mr. Shukhrat Talipov, Uzbekistan Questions and answers
10:00-10:30	Legislative, normative and methodical base of safety of hydrotechnical constructions in Tajikistan. Lecturer - Mr. Ali Fazilov, Tajikistan Questions and answers
10:30-11:00	Safety of hydrotechnical constructions in the Kyrgyz Republic Lecturer - Mr. Chingizbek Uzakbaev, Kyrgyzstan Questions and answers
11:00-11:30	<i>Coffee break</i>
11:30-12:00	Experience of the Diagnostic center of the Expert council of the State inspection "Gosvodkhozndzor" in the examination and diagnosis of the reliability of the technical condition of large and especially important hydrotechnical constructions Lecturers – Mr. Zafar Irisbayev, mr. A. Khudaiberganov, Uzbekistan Questions and answers
12:00-12:30	Fighting the silting of the reservoir thicket Lecturer - Mr. Shukhrat Talipov, Uzbekistan Questions and answers
12:00-12:30	Toktogul reservoir Lecturer - Mr. Chingizbek Uzakbaev, Kyrgyzstan Questions and answers
12:30-13:00	UNECE project “Dam safety in Central Asia: capacity building and regional cooperation”. Results and directions of development. Lecturer - Mr. Erkin Orolbayev, Kyrgyzstan Questions and answers
13:00-14:30	<i>Lunch</i>
14:30-18:00	Visiting laboratories KazSRIWM Lecturer - Mr. Mirobit Mirdadayev, Kazakhstan Questions and answers
18:00	<i>Dinner</i>
The second day, october 17	
9:30-10:00	The organization of observations of the technical condition of the earth dam. On the example of Bystrushinsk dam in the East Kazakhstan region Lecturer - Mr. Karimzhan Alibayev, Kazakhstan Questions and answers

10:00-10:30	The system of state supervision over the safety of hydrotechnical constructions in the Republic of Tajikistan Lecturer - <i>Mr. Ali Fazilov, Tajikistan</i> Questions and answers
10:30-11:00	Analysis of the causes of accidents on earth dams, conclusions and recommendations Lecturer - <i>Mr. Karimzhan Alibayev, Kazakhstan</i> Questions and answers
11:00-11:30	<i>Coffee break</i>
11:30-12:00	International experience in regulatory regulation of safety of HTC Lecturer - <i>Mr. Shukhrat Talipov, Uzbekistan</i> Questions and answers
12:00-12:30	The importance of emergency spillways in ensuring the safety and sustainability of earth dams Lecturer - <i>Mr. Karimzhan Alibayev, Kazakhstan</i> Questions and answers
12:30 – 13:00	Studies of hydrotechnical constructions Lecturer - <i>Mr. Shukhrat Talipov, Uzbekistan</i> Questions and answers
13:00-14:30	<i>Lunch</i>
14:30 – 18:00	A visit to the Talas hydrotechnical unit and the Ters-Ashchibulak reservoir Lecturer - <i>Mr. Alisher Userbayev, Kazakhstan</i>
Third day, October 18	
9:30-10:00	Inspection verification of construction quality Lecturer - <i>Mr. Shukhrat Talipov, Uzbekistan</i> Questions and answers
10:00-10:30	Disaster risks associated with water resources in Tajikistan and ensuring hydro-environmental safety Lecturer - <i>Mr. Ali Fazilov, Tajikistan</i> Questions and answers
10:30-11:00	Developments of the Kazakh scientific research institute of water management Lecturer - <i>Mr. Nurlan Balgabayev, Kazakhstan</i> Questions and answers
11:00-11:30	<i>Coffee break</i>
11:30-12:30	Automation of water accounting on irrigation systems of Kazakhstan Lecturer - <i>Mr. Nurlan Bakbergenov, Kazakhstan</i> Questions and answers
12:30-14:00	<i>Lunch</i>
14:00-15:00	A visit to the educational and scientific laboratory "Hydrological and technical safety of hydrotechnical constructions" TarSU named after M.Kh. Dulati Lecturer - <i>Mr. Saparbek Dzholdasov, Kazakhstan</i> Questions and answers
15:00-15:30	<i>Coffee break</i>
15:30-17:30	Completion of the seminar with a discussion of the results and development of recommendations for improving the work of the ITC Presentation of certificates
Departure of participants	