

P R E V E L I K E E G R A D E

Leto XXII

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Št. 1

Glasilo Slovenskega komiteja za velike pregrade - SLOCOLD

UVODNIK

Spoštovane članice in člani SLOCOLD,

Z veliko zamudo se vam oglašamo prvikrat v letošnjem letu, pa zato s toliko več informacijami.

V prvi letošnji številki Velikih pregrad boste najprej našli ponovni poziv k pripravi **prispevkov za kongres ICOLD v Stavangerju (2015)**; rok za napoved prispevkov s kratkim povzetkom in navedbami avtorjev je konec aprila, rok za oddajo člankov v angleščini v recenzijo pa 30. junij 2014.

Sledi informacija o **devetih zanimivih delavnicah**, ki so bile izvedene med letnim srečanjem ICOLD v Seattlu in za katere so v knjižnici SLOCOLD na voljo elektronske predstavitve predavateljev.

Naslednja informacija se nanaša na Letni zbor društva SLOCOLD, ki ga **sklicujem 8. maja 2014 ob 12:30 na Turistični kmetiji Peternelj, Brce 10a, 6250 Ilirska Bistrica**. Pred zborom bo organiziran ogled pregrad Klivnik in Mola, takoj po zboru pa okrepičilo z lokalnimi dobrotami omenjene ekološke kmetije. Prevoz bo organiziran iz Ljubljane, kot običajno z Dolgega mostu,

ob 7:30. **Udeležbo je treba potrditi** najkasneje do 30.4.2014 na slocold@slocold.si

Na koncu boste našli še verjetno najtežje pričakovano novico o **ekskurziji v Romunijo**, ki jo organiziramo v začetku oktobra. Praktično vsi detajli so dogovorjeni tako z lokalnim organizatorjem ROCOLD kot tudi s turistično agencijo Palma, zato vas pozivam k potrditvi interesa na naslov slocold@slocold.si do 30.4.2014. Sporočite tudi, ali želite enoposteljno sobo. Nekaj opisov in fotografij naj vam služi za lažjo odločitev.

In še nekaj manj prijetnega za konec: V jubilejnem letu 2013, ko je SLOCOLD praznoval 20 let, je bilo plačanih 38 individualnih članarin, kar je negativni rekord mojega mandata, morda pa celo vseh časov. SLOCOLD ima neuradno namreč več kot 100 članov. Zato vas prosim, da tudi s tem dejanjem vsako leto podpirate naše delovanje. **Podatki za plačilo članarine za leto 2014** (in morebitna zaostala leta) so na koncu glasila, predvidoma pa boste vsi člani v kratkem dobili obvestilo o statusu plačevanja članarine. Uvesti nameravamo tudi evidenčne številke, preko katerih boste lahko kadarkoli na spletu anonimno preverili stanje svojega članstva.

Andrej Širca

VSEBINA

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VABILO na ZBOR ČLANOV

Vljudno ste vabljeni na

22. Zbor članov društva SLOCOLD, ki bo

8. maja 2014 ob 12:30 na Turistični kmetiji Peternelj, Brce 10a, 6250 Ilirska Bistrica.

Pred Zborom bo v dopoldanskem času organiziran ogled pregrad Klivnik in Mola, po Zboru pa druženje ob kosilu. Iz Ljubljane bo organiziran avtobusni prevoz ob 7:30. Materiali za Zbor bodo vsem prijavljenim predhodno dostavljeni v elektronski obliki, za ostale pa bodo na voljo na spletni strani SLOCOLD: www.slocold.si.

Nekaj dodatnih podrobnosti o poteku ekskurzije in Zbora najdete na strani 4. **Prijave najkasneje do 30.4.2014!**

Uredniški odbor:

Urednik: Matija Brenčič

Člani: A. Kryžanowski, A. Širca, V. Koren, B. Zadnik, K. Kvaternik, I. Močnik

PRIPRAVE NA ICOLD KONGRES 2015

Vse člane SLOCOLD še zadnjič opozarjamo na vsebino kongresa ICOLD leta 2015 v Stavangerju (Norveška), ki je opisana z naslednjimi kongresnimi vprašanji:

QUESTION 96: INNOVATION IN UTILISATION OF DAMS AND RESERVOIRS

- Innovation in the role of dams and reservoirs (energy storage, offchannel storage, dams in the sea, ...)
- Multipurpose dams and reservoirs to address global changes and integrated water resources management requirements (planning, design and operation)
- Small dams and low earthfill dams (needs, peculiarities of design, construction and monitoring, new solutions)
- Needs in capacity building and development of dam engineering profession to insure sustainability of knowledge and experience

QUESTION 97: SPILLWAYS

- Uncertainties in flood evaluation: impact on spillway and dam design
- Dam failures or incidents linked to gate operation: reasons and case histories
- Gated or ungated spillways or combinations thereof
- Additional discharge facilities to existing dams and overtopping management

QUESTION 98: EMBANKMENTS AND TAILINGS DAMS

- High rockfill dams issues : innovative designs of various dam types (earth or asphalt core, CFRD, ...)

- Internal erosion: analysis, monitoring, remedial measures
- Foundation risks: failure case histories, recent progress and solutions
- Design and performance of interfaces between embankments and concrete structures
- Tailings dams: recent progress, risks, risk reduction methods, height limitation

QUESTION 99: UPGRADING AND RE-ENGINEERING OF EXISTING DAMS

- Heightening of crest or operational levels
- Desilting methods (flushing, dredging, excavation, ...)
- Decommissioning: methods, costs, impacts
- Upgrading of monitoring system and re-instrumentation

POMEMBNI ROKI ZA ČLANE SLOCOLD:

- Napovedi člankov recenzijski komisiji SLOCOLD: 30.4.2014
- Oddaja člankov recenzijski komisiji SLOCOLD: 30.6.2014
- Potrditev oz. končni izbor člankov na SLOCOLD: 30.9.2014
- Članki prejeti na ICOLD: 17.10.2014

Zaradi načrtovanja aktivnosti in finančnih sredstev prosimo vse zainteresirane, da namero za pripravo člankov čim prej sporočijo Andreju Širci ali na slocold@slocold.si

ICOLD 2013 - 81st ANNUAL MEETING OF THE INTERNATIONAL COMMISSION ON LARGE DAMS - TECHNICAL WORKSHOPS

V tem prispevku podajamo povzetke delavnic, ki so bile izvedene med letnim srečanjem ICOLD v Seattlu. V knjižnici SLOCOLD so za zainteresirane na voljo elektronske predstavitve vseh predavateljev.

WORKSHOP 1 – Life Extension Technologies and Strategies for Aging Dams (Organized by the USSD Committee on Construction and Rehabilitation)

This workshop presents a discussion on dam owner's decisions regarding the value of their facilities and case studies on dam modification technologies that are advancing the state of the practice. A panel of major dam owners will discuss the process used for evaluation of their dam to either 1. Extend the facility life, 2. Enhance and extend the facility life, or 3. Remove the dam and reclaim the area. Case studies will present alternatives recently used in the United States to extend the life of existing dams that have identified deficiencies. The case studies cover

modifications to embankments, foundation, outlet works, and spillways. The case study projects recognize the value of the stored water and enable continued reservoir operation during construction.

WORKSHOP 2 – Risk Informed Dam Safety Management (Organized by the USSD Committee on Dam Safety and Dam Security)

This workshop demonstrates how some dam owners and regulators have transformed their approach to managing dam safety through a risk-informed approach. The workshop will commence with an overview of risk-informed portfolio dam safety management, how it builds on and strengthens traditional approaches to dam safety, and how it can integrate with the owner's business. The workshop then draws from the experience of large public and private US dam owners and a US dam safety regulator to share their experience with the development and

implementation of portfolio risk management. Given the use of risk management for more than a decade in some other countries, a UK private dam owner and an Australian dam safety regulator will share their experience of using risk-informed approaches. The workshop will then close with a panel discussion panel consisting of presenters and risk-assessment experts to address questions and express their views on the challenges ahead for dam safety management.

WORKSHOP 3 – Managing Spillway and Reservoir Capacity Changes (Organized by the USSD Committee on Hydraulics of Dams)

This workshop addresses specific challenges that occur at existing dams when spillway and reservoir capacities are changed. The workshop explores the factors that influence the need for capacity changes and the approaches being taken in the United States to address these challenges. The workshop will first cover the assessment and evaluation of spillway and reservoir capacity changes including identifying the issues, performing dam evaluation and spillway operation reviews, and making the decision to rehabilitate. The workshop will then examine the approaches to respond to spillway and reservoir capacity shortfalls, including spillway expansion to meet design flood requirements, use of physical and numerical models to evaluate spillway hydraulics, and consideration in selecting and designing spillway upgrades. The discussion will include the use of risk assessment in decision making, tools for analysis and design, typical retrofit options being used in the United States, and other considerations in selecting spillway upgrades.

WORKSHOP 4 - Aging of Concrete Dams (Organized by the USSD Committee on Concrete Dams)

Concrete dams change with time. Aging is often thought of in a negative context, but this is not always the case. This Workshop identifies common aging mechanisms that affect concrete dams, explain how concrete material properties change with time, and relate aging mechanisms to potential failure modes at dams. Some of the aging processes that will be examined include concrete deterioration mechanisms, reduced drain efficiency, erosion of the downstream foundation, gate reliability issues, and failure of waterstops. The Workshop will examine changing concrete properties with time, effects of aging on potential failure modes, and Aggregate Alkali Reaction (AAR) induced potential failure modes. The Workshop will conclude with case studies that explore the impact of key aging mechanisms on the safety of concrete dams.

WORKSHOP 5 – State of the Art Technologies for Monitoring Dams and Levees (Organized by the USSD Committee on Monitoring of Dams and Their Foundations)

A Workshop with presentations, discussions, and question and answer periods involving invited industry experts covering currently available and emerging new technologies in monitoring including distributed fiber

optic sensing for seepage and strain monitoring; data collection, presentation, analysis and management tools and techniques; geophysics; sonar; and surface position measurement technologies such as LIDAR and InSAR.

WORKSHOP 6 – Closure of Tailings Dams (Organized by the USSD Committee on Tailings Dams)

The Committee on Tailings Dams provides a forum for exchange of knowledge and experience in tailings dam design, operational performance, and reclamation. The committee provides a forum for exchange of information within members of the committee as well as a vehicle for dissemination of information from the committee to interested persons involved with tailings dam design, operation, and regulation. Dissemination of information from the committee is primarily through documents published by USSD or ICOLD.

WORKSHOP 7 - Best practices in levee and embankment technology (Organized by the USSD Committee on Levees)

Themes:

- Hydraulic Design – Evolving Hydraulic Design Criteria
- Geotechnical Design – Aspects of Seepage and Stability Design
- Penetrations and Closures
- Levees and Embankments in the News and Around the World

WORKSHOP 8 - Decommissioning Dams

Articles:

- Overview of USSD Guidelines
- Sediment Management Issues for Dam Removal
- Dam Removal Projects in Western US
- Elwha River Restoration Project
- Condit Dam Removal Project
- Dam Removal Projects in Eastern US
- San Clemente Dam Removal
- Matilija Dam
- Dam Removal Projects Outside the U.S.

WORKSHOP 9 – Seismic Analysis of Embankment Dams (Organized by the USSD Committee on Earthquakes)

The workshop will provide an overview of current U.S. practice for the seismic analysis of embankment dams, including characterization of earthquake ground motions for dam analysis. The presentations will first examine earthquake ground motions, the analysis framework, and static stress analysis. Expanding on these basic principles, the workshop will examine dynamic response analysis, liquefaction and post-earthquake stability, and seismic stability and deformation. The analysis procedures will be illustrated through examples and/or case histories.

In addition, representatives from Japan present information on the effects of earthquakes on dams in Japan. Many large earthquakes, such as the 2008

Iwate-Miyagi Inland Earthquake and the 2011 Tohoku Earthquake will be discussed. The characteristics of and effects and damage to embankment dams due to these earthquakes will be introduced. A case study on reproduction analysis of earthquake-induced settlement will also be shown. Many dams have their seismographs on the crest and foundation and strong seismic records are available. Using these seismic

records, the estimated dynamic deformation ($G-\gamma$) properties from the difference of displacements between crest and foundation are described. As a result, the estimated response of the dam body is reproduced and the earthquake response behavior is estimated.

ZBOR ČLANOV 2014

Letni zbor društva SLOCOLD, bo v četrtek, 8. maja 2014 ob 12:30 na Turistični kmetiji Peternelj, Brce 10a, 6250 Ilirska Bistrica. Pred zborom bo organiziran ogled pregrad Klivnik in Mola, ki sta ob ocenjevanju varnosti v okviru projekta VODPREG dobili razmeroma slabi oceni. Po zboru bomo deležni okrepčila z lokalnimi dobrotami omenjene Ekološke turistične kmetije. Prevoz bo organiziran iz Ljubljane, kot običajno z Dolgega mostu, ob 7:30.



Slika 1: Pregrada Klivnik



Slika 2: Jezero Klivnik

Okvirni dnevni red dogajanj je naslednji:

- 7:30: Odhod z Dolgega mostu (Ljubljana)
- 7:30 – 9:30: Prevoz do pregrade Klivnik
- 9:30 – 10:30: ogled pregrade Klivnik
- 10:30 – 11:00: predstavitev na pregrad Mola
- 11:00 – 12:00: ogled pregrade Mola
- 12:00 – 12:30: predstavitev na kmetijo Peternelj
- 12:30 – 15:00: program Zbora (okvirno 1 ura) in druženje ob jedachi in pijači
- 15:00 – 17:00: vožnja v Ljubljano
- 17:00: zaključek na Dolgem mostu

Materiali za Zbor bodo vsem prijavljenim predhodno dostavljeni v elektronski obliki, za ostale pa bodo na voljo na spletni strani SLOCOLD: www.slocold.si.



Slika 3: Pregrada Mola



Slika 4: Jezero Mola

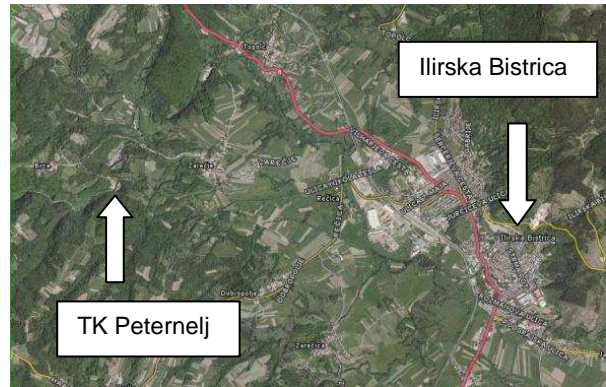
Turistična kmetija Peternelj se nahaja blizu Ilirske Bistrice (glej karto v nadaljevanju ter spletno stran <http://turisticnakmetijapeternelj.si/>).



Slika 5: Turistična kmetija Peternelj



Dostop iz Ljubljane (ca 80 km) Peljemo se do Postojne, zavijemo v smeri Ilirske Bistrice. Pot nadaljujemo do Pivke, kjer zavijemo desno. Pred Ilirsko Bistrico zavijemo desno, ter na prvem križišču zopet zavijemo desno (smer Podgrad). Ko pridemo čez reko Reko, takoj zavijemo desno za vas Zarečje in kmalu prispemo v vas Brce:



Zaradi organizacije prevoza in kosila se je za Zbor članov potrebno predhodno prijaviti. Prijave prosim po možnosti do 25.4.2014, najkasneje pa do 30.4.2014.

STROKOVNA EKSKURZIJA V ROMUNIJO, 2. – 5. oktober 2014

Letos smo se za razliko od dosedanje prakse ogledov »zahodnih« in jugoslovanskih pregrad odločili za nam bolj nepoznan vzhod Balkana, Romunijo.

Ekskurzija bo organizirana v začetku oktobra, od srede 1.10. do nedelje 5.10. Prevoz bo avtobusni, videli bomo 4-5 pregrad in imeli en bolj turističen dan. Polna cena bo okrog 300 Eur, kritje SLOCOLD bo v običajnem obsegu. Praktično vsi detajli so dogovorjeni tako z lokalnim organizatorjem ROCOLD kot tudi s turistično agencijo Palma, zato vas že sedaj pozivam k potrditvi interesa (to še ne pomeni prijave, ampak nam služi za lažje načrtovanje števila) na naslov slocold@slocold.si do 30.4.2014. Sporočite tudi, ali želite enoposteljno sobo. V nadaljevanju je podanih nekaj opisov in fotografij za lažjo odločitev.



Slika 6: Pregrada Belis

Jezero Belis-Fantanele je umetno jezero. Jez in akumulacija sta bila zgrajena med 1970 in 1974 na reki Somesul Cald. Ima površino 9,8 kvadratnih kilometrov in dolžino 13 km, nahaja se na nadmorski višini 990 metrov. Jezero Belis-Fantanele je sedaj turistično središče.



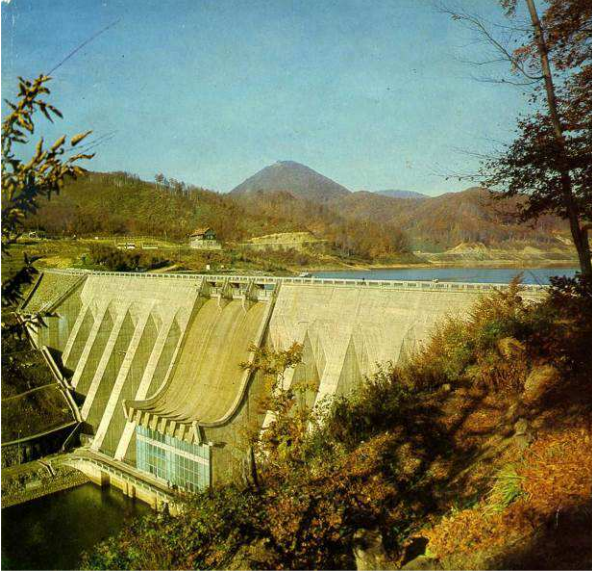
Slika 7: Pregrada Belis

Akumulacija je zalila več zaselkov, katerih ruševine je možno videti med suhimi poletji pri nizkem vodostaju. Najbolj opazna je ruševina potopljene cerkve naselja Giurcuta de Jos.



Slika 8: Pregrada Belis

Jezero Firiza ali tudi Stramtori je nastalo leta 1964 na reki Firiza, ki se izliva v reko Sasar pri mestu Baia Mare. Z zgraditvijo jezua višine 52 m je nastalo jezero dolžine 3 km in širine 1 km z namenom oskrbe mesta Baia Mare z vodo. Sedaj je jezero namenjeno predvsem turizmu.



Slika 9: Pregrada Stramtori

Iz jalovinske pregrade Aurul pri mestu Baia Mare je leta 2000 izteklo ca 100 000 m³ vode s ca 700 tonami cianida, v reko Somes. Onesnažena voda je odtekla po Tisi in Donavi in povzročila velik pomor rib na Madžarskem in v Jugoslaviji. Razlitje je bila najhujša okoljska katastrofa v Evropi po nesreči v Černobilu.



Slika 10: Pregrada Aurul - tri dni po prebitju pregrade

VZOREC POLOŽNICE ZA PLAČILO ČLANARINE SLOCOLD 2014

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| UPN Ime plačnika _____ Namen / rok plačila ČLANARINA 2014 Znesek EUR = 25,00 IBAN prejemnika in BIC banke prejemnika SI56 0201 0001 9573 887 Referenca prejemnika SI 00 2014 Ime prejemnika DRUŠTVO SLOCOLD Hajdrihova 4, 1000 Ljubljana | IBAN _____ Polog <input checked="" type="checkbox"/> Dvig <input type="checkbox"/> Referenca _____ Ime in naslov _____ Kode namena _____ Namen / rok plačila OTHR Članarina za leto 2014 Znesek _____ Datum plačila _____ BIC banke prejemnika _____ EUR = 25,00 IBAN _____ SI 56 02 01 00 01 95 73 88 7 Referenca _____ SI 00 2014 Ime in naslov _____ DRUŠTVO SLOCOLD Hajdrihova 4, 1000 Ljubljana Prostor za vpise ponudnika plačilnih storitev | Podpis plačnika (meobvezno žig) _____ <input checked="" type="checkbox"/> Nujno <input checked="" type="checkbox"/> Izjava |
| Potrditev plačila UPN | Prosimo, ne pišite in ne žigosajte v tem prostoru. | Tisk MERLE 10/2010 |
| Obrazec UPN - Univerzalni plačilni nalog | | |