

Hydropower O&M Essentials Training Program

Equipping professionals with essential knowledge to enhance safety, efficiency, and sustainability in hydropower operations.



Why This Training Program?

Hydropower Asset Managers and Operators often work in environments with lean resources, inconsistent knowledge transfer, and reliance on small, multi-skilled teams. These challenges are intensified by the retirement of experienced professionals and the growing need to align operations with modern tools and practices.

This program is designed to address these realities, equipping participants with practical skills, proven strategies, and the latest tools to thrive in the evolving hydropower industry. It empowers professionals to drive operational excellence, enhance team collaboration, and adapt to industry advancements.

The Challenges:

- **Limited Training Opportunities:** Most professionals receive training during hiring or commissioning phases, leaving gaps in ongoing development.
- **Knowledge Gaps:** Retirements and limited documentation of best practices lead to the loss of critical institutional knowledge.
- **Keeping Up with Advancements:** Adapting to modern maintenance strategies, diagnostic tools, O&M models, and digitization techniques is essential for improving efficiency, safety, and sustainability.

Program Objectives:

- **Equip Professionals with Practical Skills:** Provide targeted training in asset management, maintenance, diagnostics, safety, and data-driven decision-making.
- **Foster Collaboration and Knowledge Sharing:** Build a network of peers to exchange best practices and solutions for operational challenges.
- **Introduce Modern O&M Practices:** Cover advanced tools, technologies, and models to enhance performance and sustainability.
- **Support Strategic Decision-Making:** Develop business cases for operational investments that align with organizational goals and industry best practices.

By addressing these critical areas, this program equips participants with the tools and confidence to navigate industry challenges, foster resilience, and deliver sustainable value to hydropower operations.

Next Course Offering

Check our website for the latest course schedule and upcoming training sessions.

Don't miss the opportunity to elevate your team's skills and achieve operational excellence.



Register now: sunbirdpower.ca



Contact: Babar Khan | babar.khan@sunbirdpower.ca



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What is Hydropower O&M Essentials Training Program?

The Hydropower O&M Essentials Training Program is a three-day, 10+ hour online, interactive course tailored for professionals in the hydropower industry. **It serves as both a refresher for seasoned operators, maintainers, engineers, and asset managers, and as a foundational program for those new to hydropower roles.** Delivered in an engaging format, the program fosters collaboration, practical learning, and accessibility across different time zones. **Focus Areas:**

✓ Health, Safety, and Environmental (HSE) Compliance

- Awareness-level safety practices, including electrical safety, confined spaces, fall arrest, and public safety around dams.
- Environmental stewardship with topics like flow ramping, aquatic habitat protection, and oil spill prevention.
- Best practices for health and safety plans, incorporating lockout/tagout (LOTO) procedures, arc flash awareness, and incident management.

✓ Hydropower Fundamentals and Organizational Design

- Key principles of hydropower generation, watershed management, and facility types.
- The role of hydropower in balancing renewables and ensuring grid stability.
- Building resilient, multi-skilled teams and aligning O&M structures with organizational goals.

✓ Maintenance Strategies and CAPEX Planning

- Transitioning from reactive to predictive maintenance through advanced diagnostic tools.
- Developing maintenance plans and CAPEX priorities to optimize reliability and reduce costs.
- Strategic frameworks for long-term sustainability and lifecycle management.

✓ Budgeting and Financial Planning

- Differentiating between OPEX and CAPEX for operational efficiency.
- Business case preparation for repair vs. replace decisions.
- Prioritizing financial resources with long-term and annual CAPEX models.

✓ Data and Information Management

- Leveraging SCADA, CMMS, and dashboards to optimize performance.
- Centralized data management for compliance and streamlined operations.
- Training in data-driven tools for better decision-making and operational insights.

✓ Asset Management Principles

- Industry leading - ISO 55000-aligned strategies for optimizing performance and value creation.
- Balancing cost, risk, and performance for sustainable asset management.
- Aligning maintenance and operational practices with organizational objectives.

This program has been successfully delivered to over 50 professionals, including Operators, Maintainers, Engineers, and Asset Managers. Participants consistently praise the trainers for presenting clear concepts, fostering engagement, and addressing real-world challenges effectively.

For more information, please visit: sunbirdpower.ca



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Trainer Bios

Babar Khan (Lead Trainer)



Babar is a Professional Engineer and Asset Management Specialist with over 20 years of global experience in the development and operation of hydropower, renewable energy, and power utility infrastructure. He has managed 11 hydropower facilities across three time zones and consulted on the development and operational readiness of small to large hydropower projects worldwide. A co-author of the World Bank's Hydropower O&M Strategies Handbook (2020), he has worked extensively with organizations to optimize operational efficiency and sustainability.

Chris Reed



Chris is a dedicated trainer with 30+ years of experience in hydropower O&M and extensive expertise in commissioning. He has successfully trained operators across Canada, emphasizing practical skills like troubleshooting, turbine repairs, and equipment optimization. Known for his engaging hands-on approach, Chris prepares participants to handle real-world challenges and enhance operational outcomes.

James Florance



James is an experienced Lead Operator and Site Manager with over 20 years in hydropower O&M. He specializes in SCADA upgrades, electromechanical rehabilitation, and CAPEX project leadership. Starting his career at the award-winning Sechelt Creek Generating Station, James consistently mentors teams to implement industry-leading best practices while maintaining high operational standards.

James Carter



James is a seasoned professional with 25+ years in the renewable energy sector. He has held senior leadership roles at Regional Power and CC&L, successfully managing hydropower projects and building operational capacity. As a board member of the Ontario Waterpower Association, James specializes in fostering partnerships, navigating regulatory frameworks, and driving industry innovation.

Program Reviews

Feedback from
34 Trainees

Overall Satisfaction

100%

68% Very Satisfied, 32%
Somewhat Satisfied

Expectations Met

96%

67% Fully Met, 29%
Partially Met

Facilitator Effectiveness

85%

Rated Very Well

Organizational Endorsements

"We express our sincere appreciation for the meticulous organization and facilitation of the Hydropower O&M Training. The knowledge and tools provided have significantly enhanced our operational capabilities." (Urja Hydropower Developers)

"The training exceeded our expectations, providing both strategic insights and practical tools to tackle operational challenges. We are confident this will drive sustainable improvements in our projects." (Pek Global, 100% community-based Indigenous organization in Quebec)

