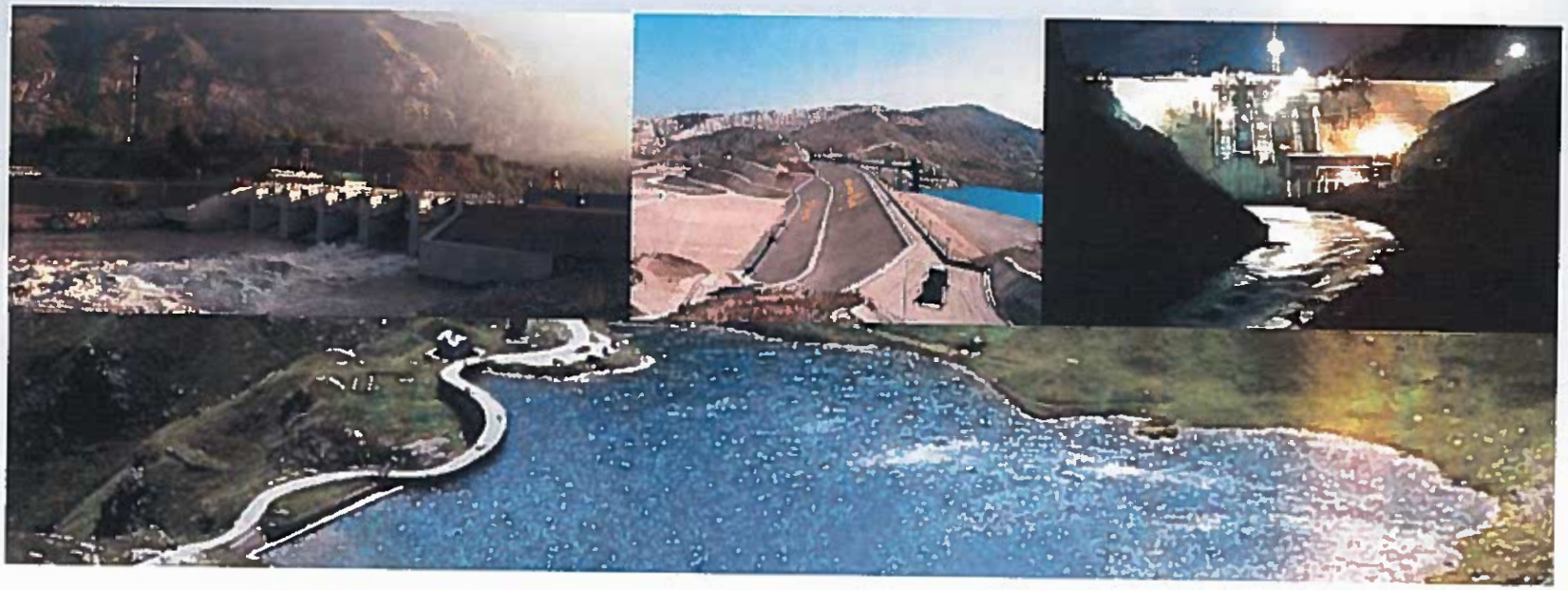
RPH 3

Muskrat Falls Generation

(Lower Churchill Project, Labrador, Canada)



Final Presentation

Sept. 4th, 2013

nalcor energy

ASTALDI CANADA Inc.

2. Project Execution Key Personnel

The start-up team

Guido Venturini — *Italian*

Project Director

Experience: 21 years

4 HPP projects in Italy, Cile, and Peru

Ken Chryssolor — *Canadian*

Project Manager

Experience: 45 years

10 HPP projects in Canada in very similar climatic condition

Jack Shangmin Zhou — *Canadian*

Deputy Project Manager

Experience: 25 years

3 HPP projects in Africa and South America as DPM and PM

2. Project Execution Key Personnel

The start-up team

Vittorio Robiati — *Italian*

Construction Manager

Experience: 45 years

12 HPP projects in Nepal, China, Turkey, South and Central America

Marco Brollo — *Italian*

Deputy Construction Manager

Experience: 27years

4 Hydro projects in Italy, Mozambique, Panama and Peru

Nicola D'Emilio — *Italian*

Assistant Construction Manager

Experience : 40 years

3 HPP projects in Iraq, Cina and Italy

2. Project Execution Key Personnel

The start-up team

Pierre Cianni — Canadian

Planner

Experience: 42 years

4 HPP projects in Canada, Nigeria and Indonesia

Federico Accorsi — Italian

Procurement Manager

Experience : 25 years

Procurement Manager for the Pacific Side of the Canale de Panama

Sante Bonanni — Italian

Hydraulic Engineer

Experience: 29 years

6 HPP projects in Honduras, Salvador, Italy, Peru

2. Project Execution Key Personnel

The start-up team

Marvin Bennet* — *Canadian*

General Superintendent

Experience : 27 years

6 HPP projects in Canada (Lower Mattagami HP and others)

Yves Gagnon* — *Canadian*

General Superintendent

Experience: 35 years

7 HPP projects in Canada (Eastmain, Long Lake, Wuskwatim, etc)

Yves Gauthier* — *Canadian*

Formworks Superintendent

Experience: 34 years

3 HPP projects in Canada (Lower Mattagami , Long Lake, Wuskwatim)

* *Final agreement still pending*

2. Project Execution Key Personnel

The start-up team

Yves Gauthier* — *Canadian*

Formworks Superintendent

Experience: 34 years

3 HPP projects in Canada (Lower Mattagami , Long Lake, Wuskwatim)

Craig McKinnon* — *Canadian*

Foreman

Experience : 19 years

1 HPP project in Canada (Lower Mattagami HP and others)

Yves Girard* — *Canadian*

Foreman

Experience: 14 years

2 HPP projects in Canada (Lower Mattagami and Wuskwatim)

** Final agreement still pending*

2. Project Execution Key Personnel

The start-up team

Marco Marchetti — *Italian*

Structural Engineer

Experience: 9 years

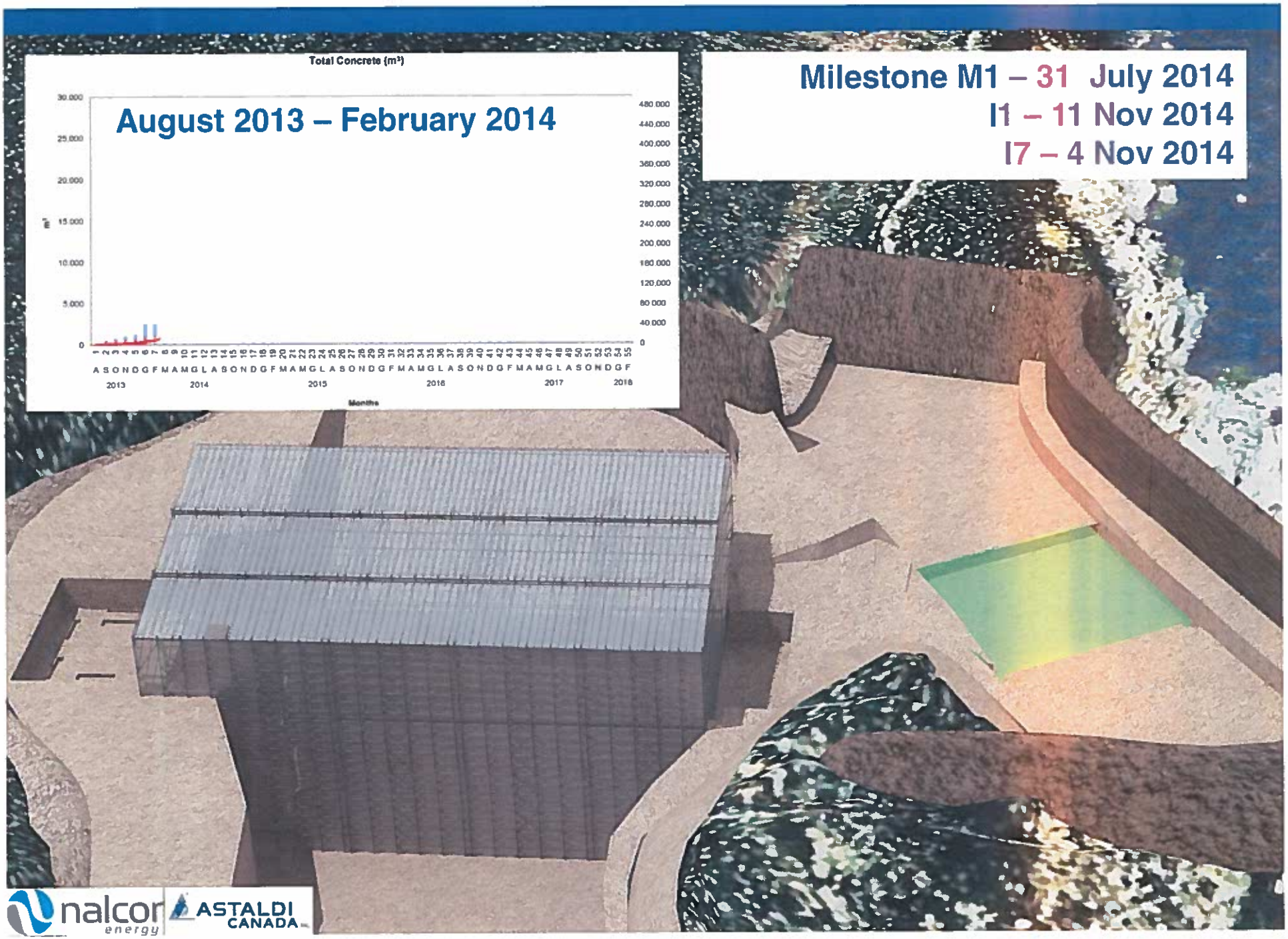
3 HPP projects in Costa Rica and Peru

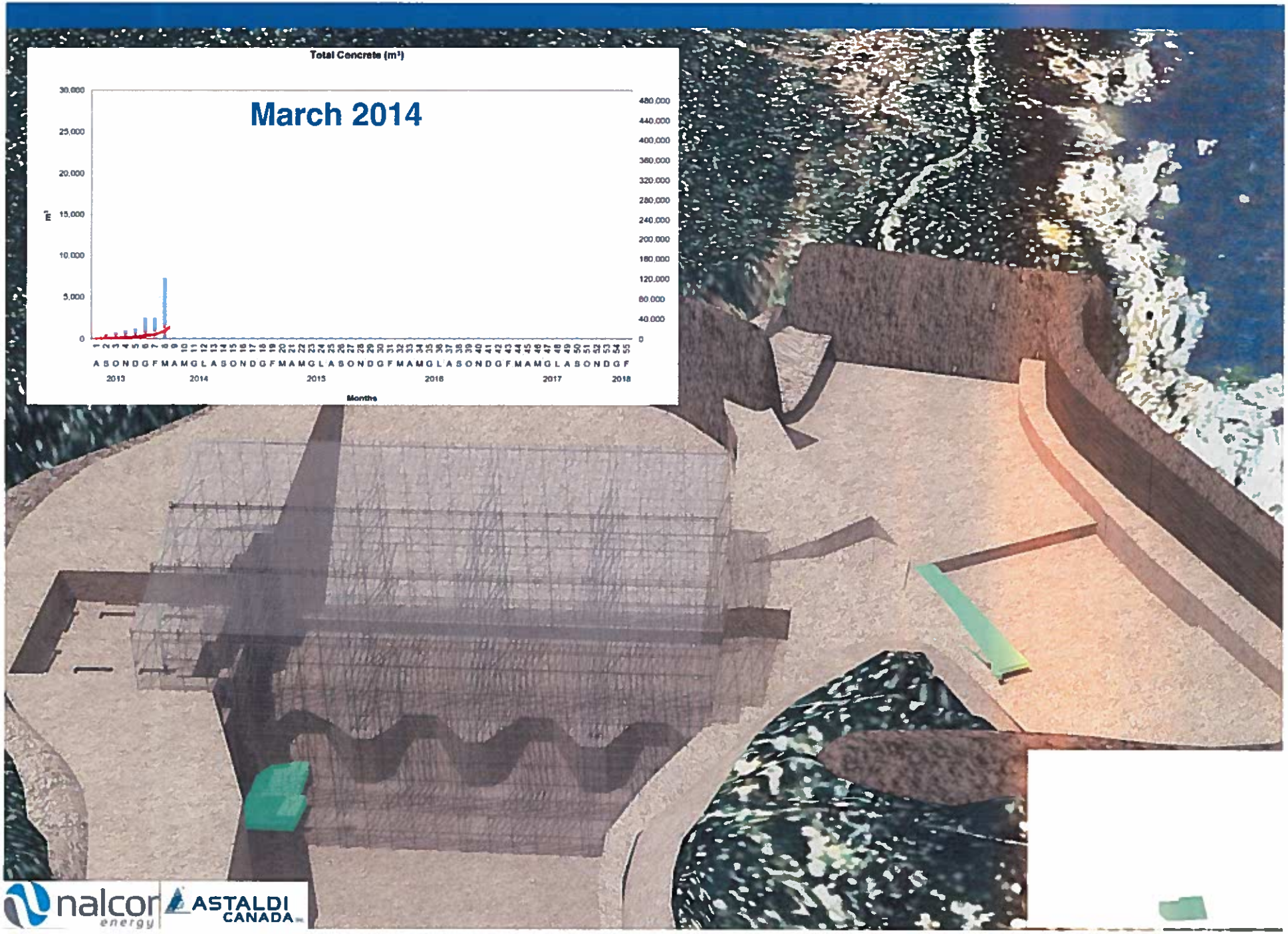
Enzo Raho — *Italian*

Safety Manager

Experience: 10 years

3 major projects in Italy (more than 1000 workers each)


Total Concrete (m³)
August 2013 – February 2014
Milestone M1 – 31 July 2014
I1 – 11 Nov 2014
I7 – 4 Nov 2014
2013
2014
2015
2016
2017
2018
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
March 2014
30,000
25,000
20,000
15,000
10,000
5,000
0
480,000
440,000
400,000
360,000
320,000
280,000
240,000
200,000
160,000
120,000
80,000
40,000
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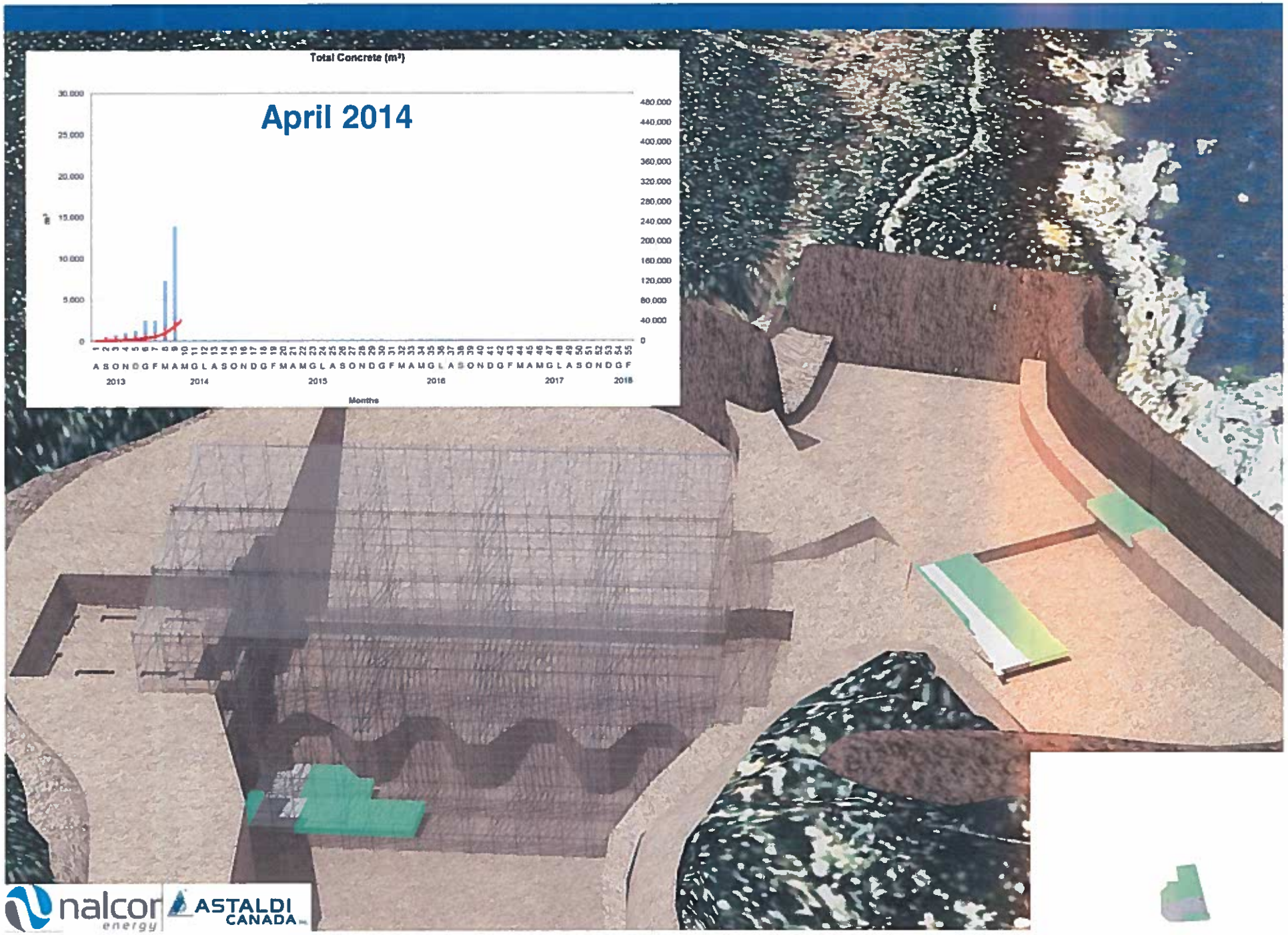
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
April 2014
30,000
25,000
20,000
15,000
10,000
5,000
0
480,000
440,000
400,000
360,000
320,000
280,000
240,000
200,000
160,000
120,000
80,000
40,000
0
A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F
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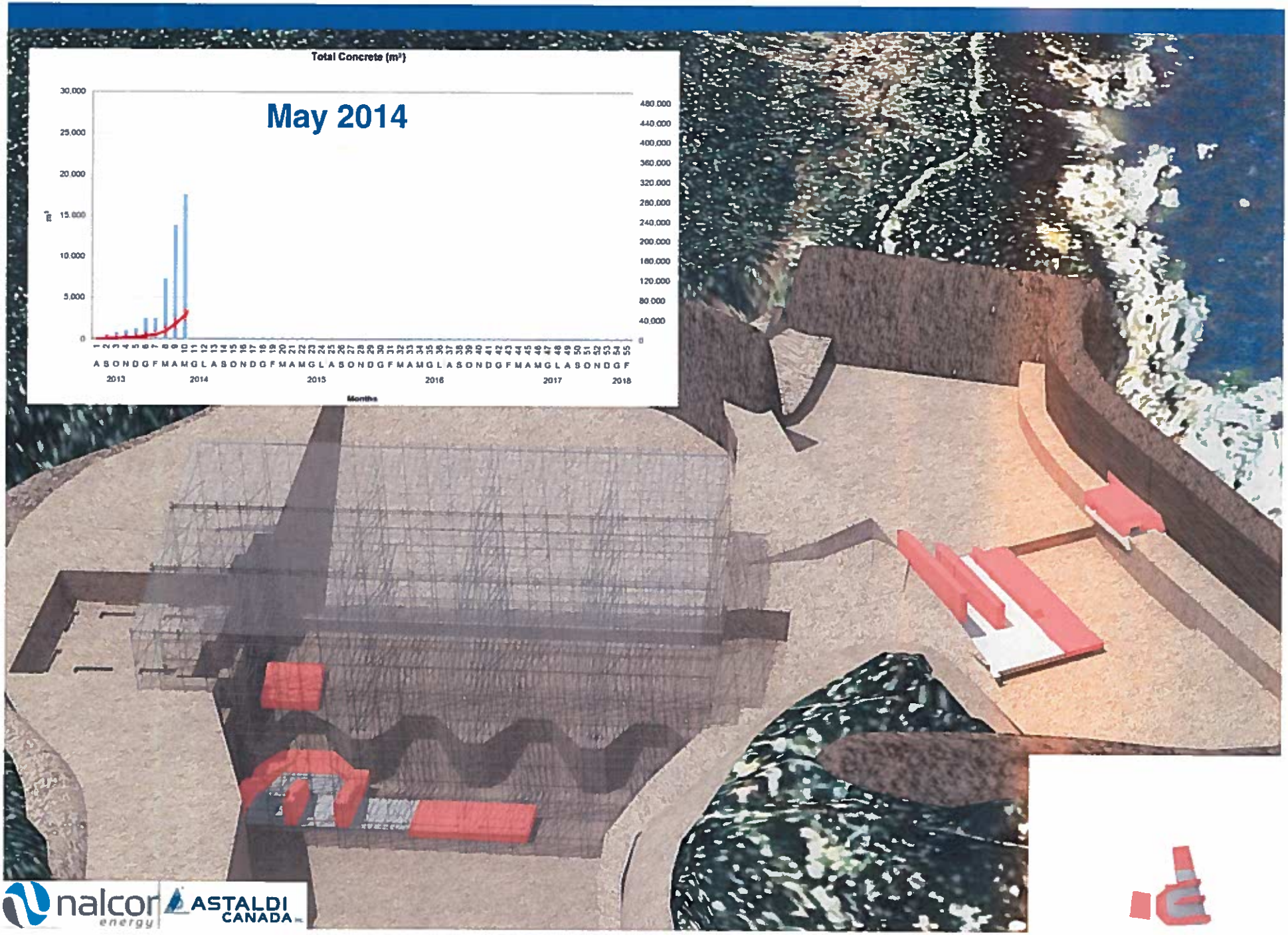
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
May 2014
30,000
25,000
20,000
15,000
10,000
5,000
0
m³
480,000
440,000
400,000
360,000
320,000
280,000
240,000
200,000
160,000
120,000
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A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F
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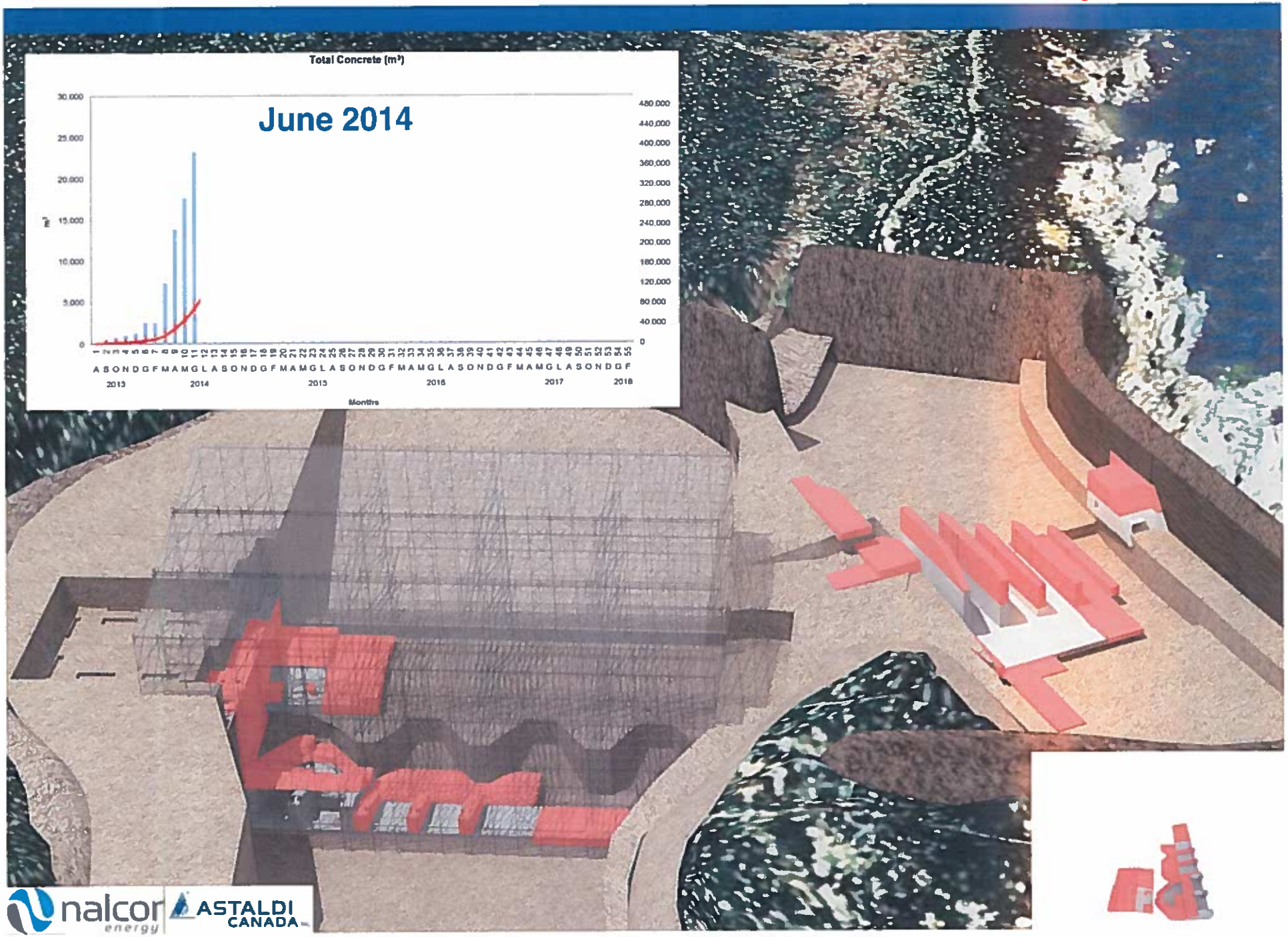
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
June 2014
30,000
25,000
20,000
15,000
10,000
5,000
0
480,000
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400,000
360,000
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240,000
200,000
160,000
120,000
80,000
40,000
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A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F
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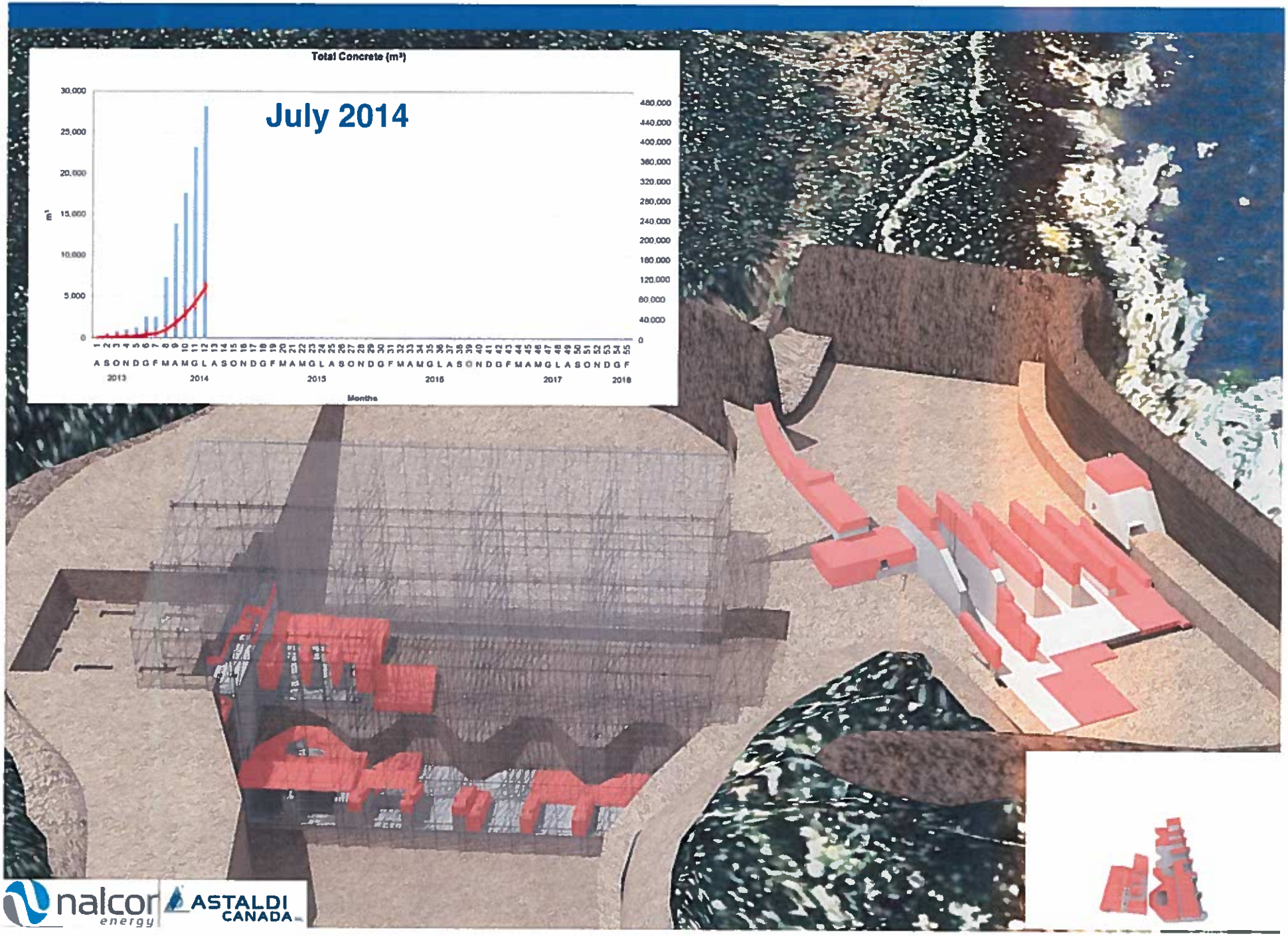
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
July 2014
30,000
25,000
20,000
15,000
10,000
5,000
0
m³
480,000
440,000
400,000
360,000
320,000
280,000
240,000
200,000
160,000
120,000
80,000
40,000
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A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F
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Months
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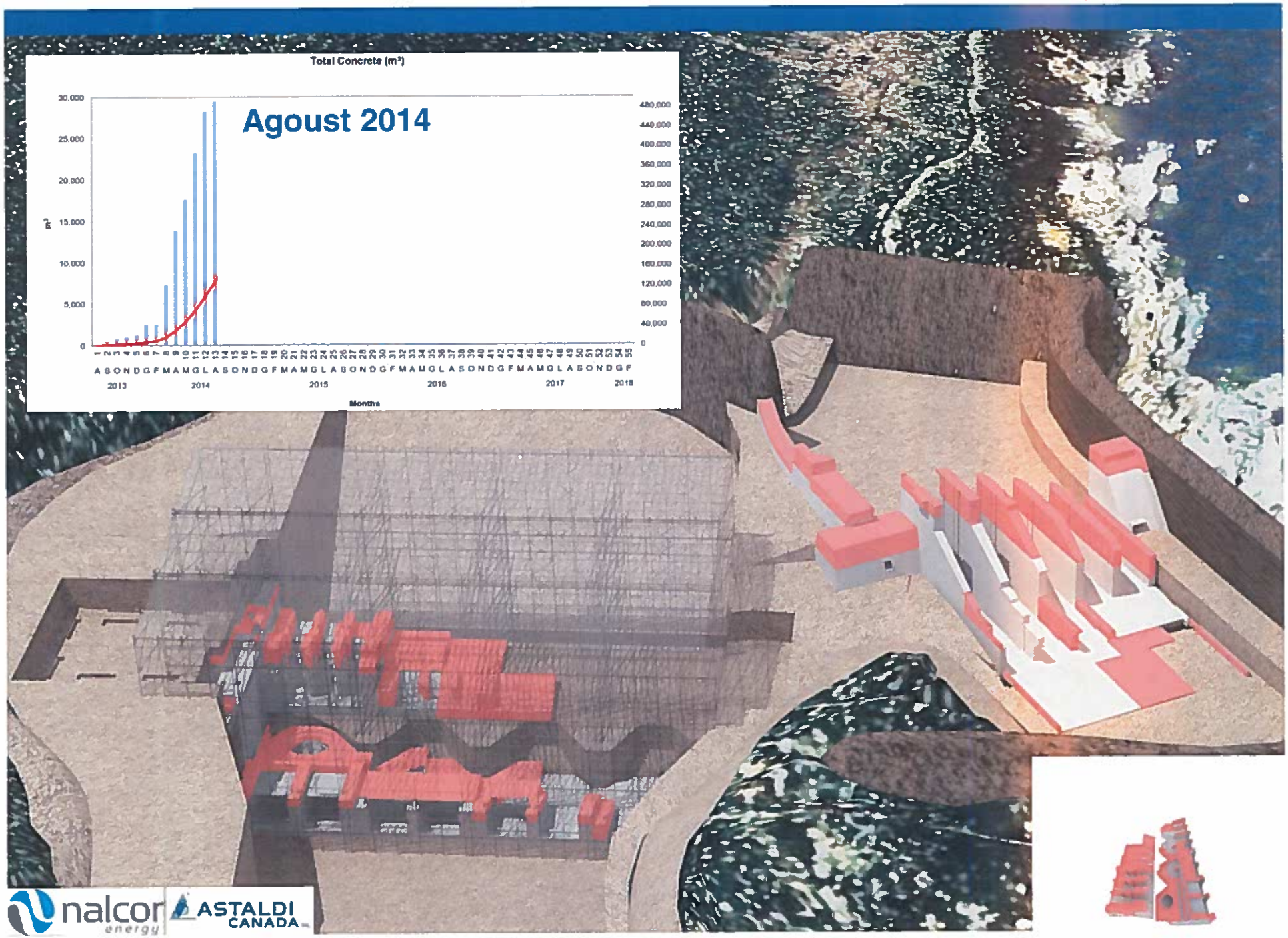
ASTALDI CANADA


Total Concrete (m³)
Agoust 2014
30,000
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10,000
5,000
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m³
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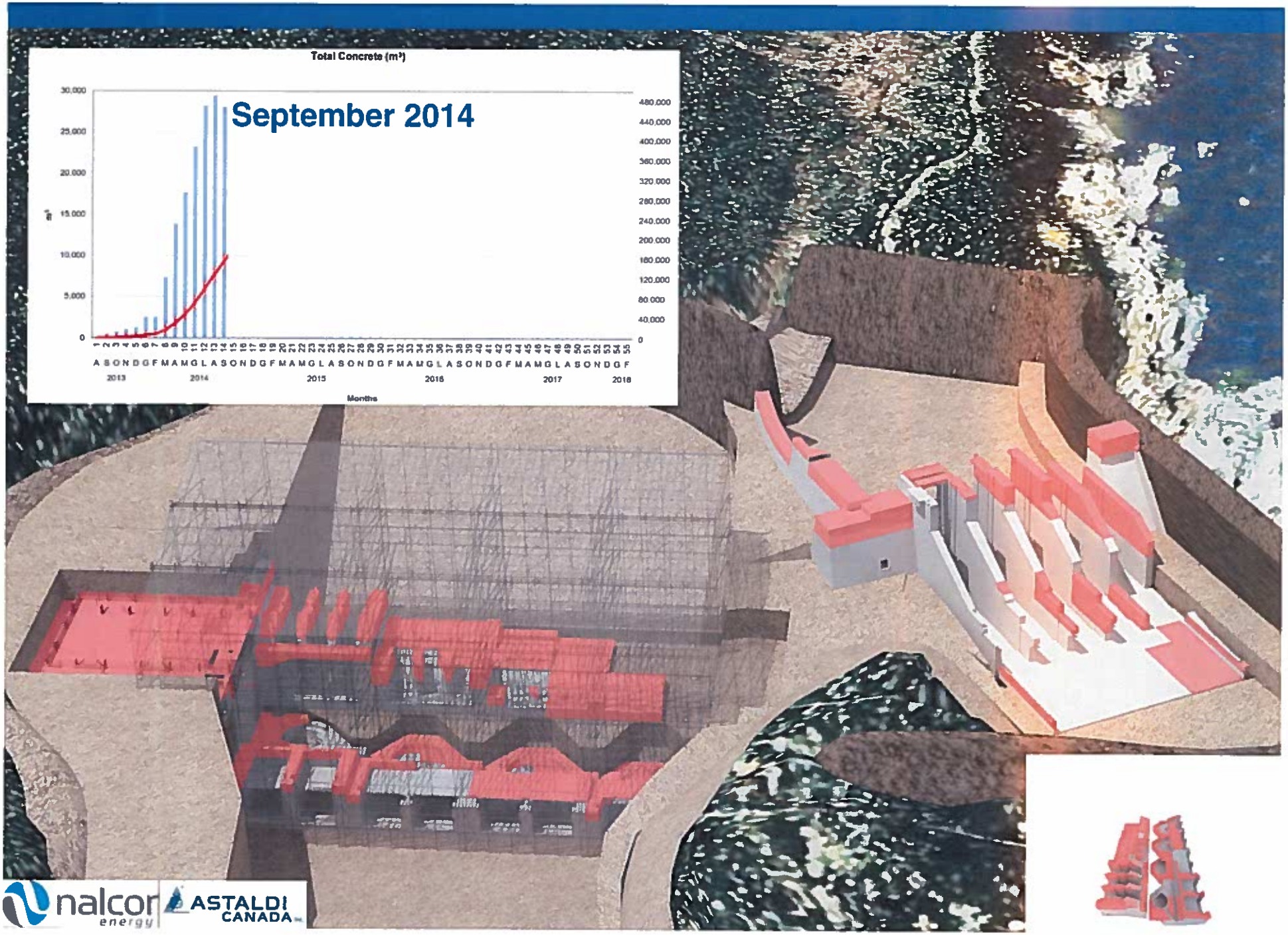
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
September 2014
30,000
25,000
20,000
15,000
10,000
5,000
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480,000
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360,000
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Months
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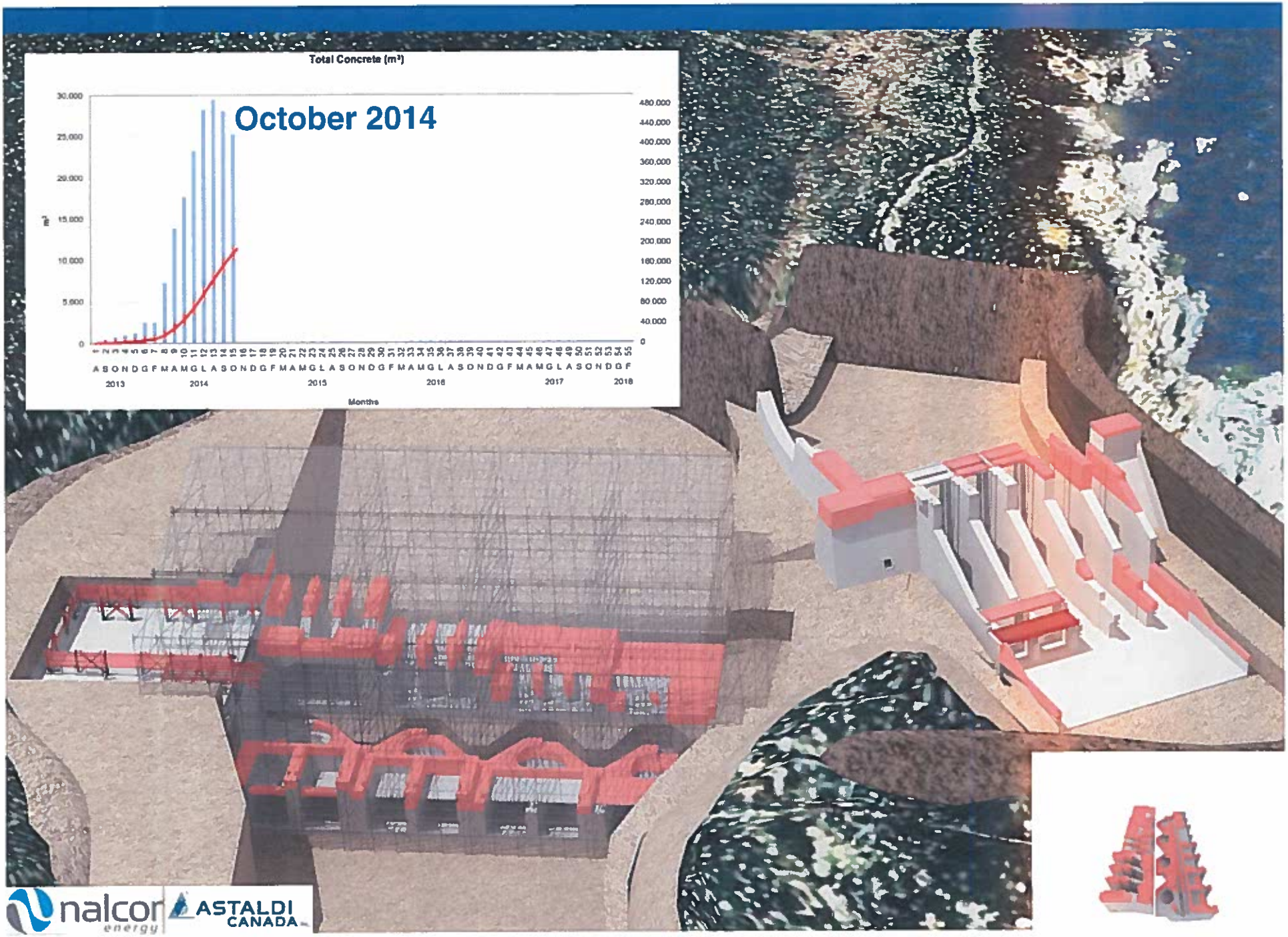
ASTALDI CANADA


Total Concrete (m³)
October 2014
Months
2013
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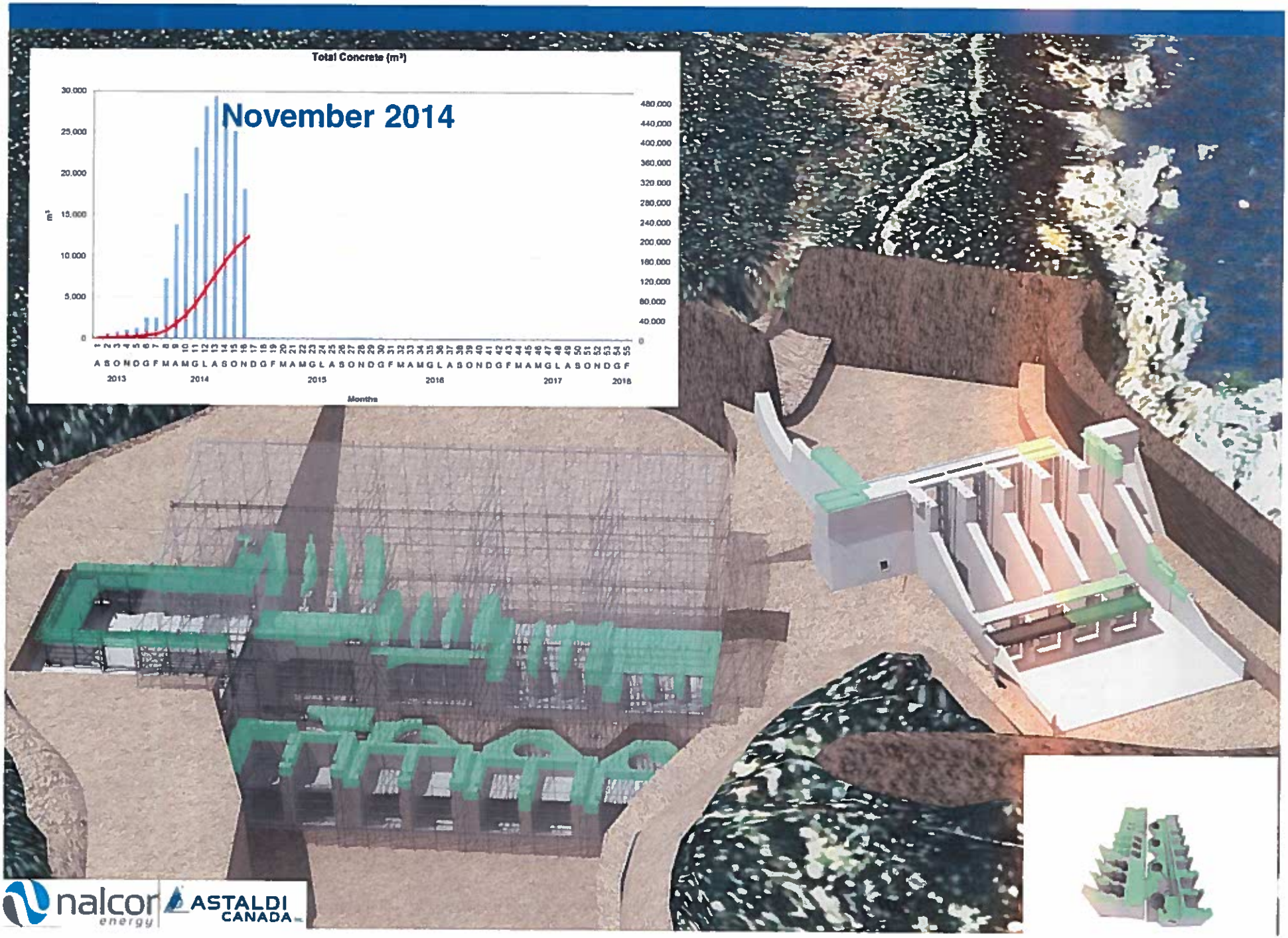
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
November 2014
30,000
25,000
20,000
15,000
10,000
5,000
0
m³
480,000
440,000
400,000
360,000
320,000
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200,000
160,000
120,000
80,000
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0
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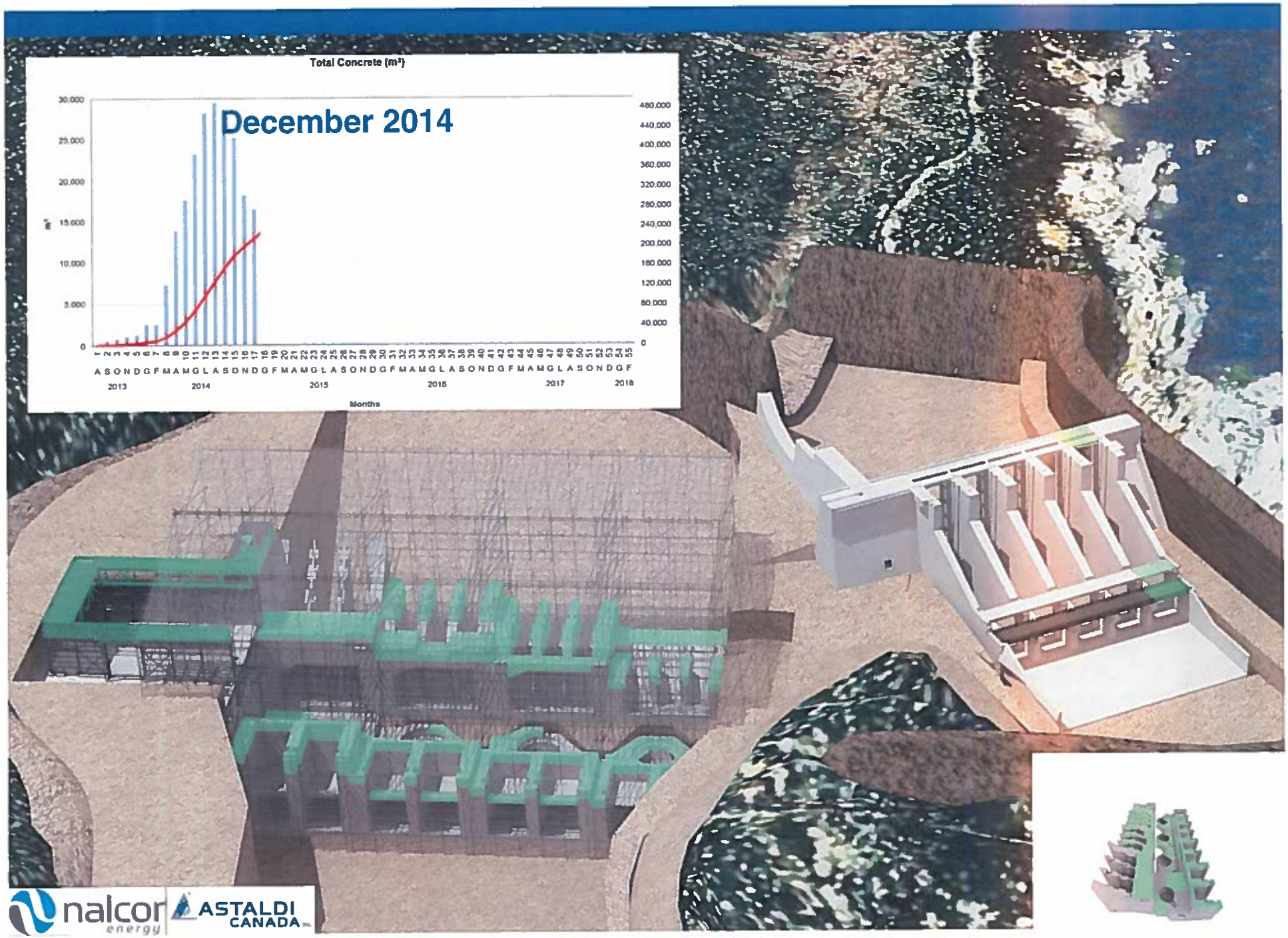
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
December 2014
30,000
25,000
20,000
15,000
10,000
5,000
0
480,000
440,000
400,000
360,000
320,000
280,000
240,000
200,000
160,000
120,000
80,000
40,000
0
A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F
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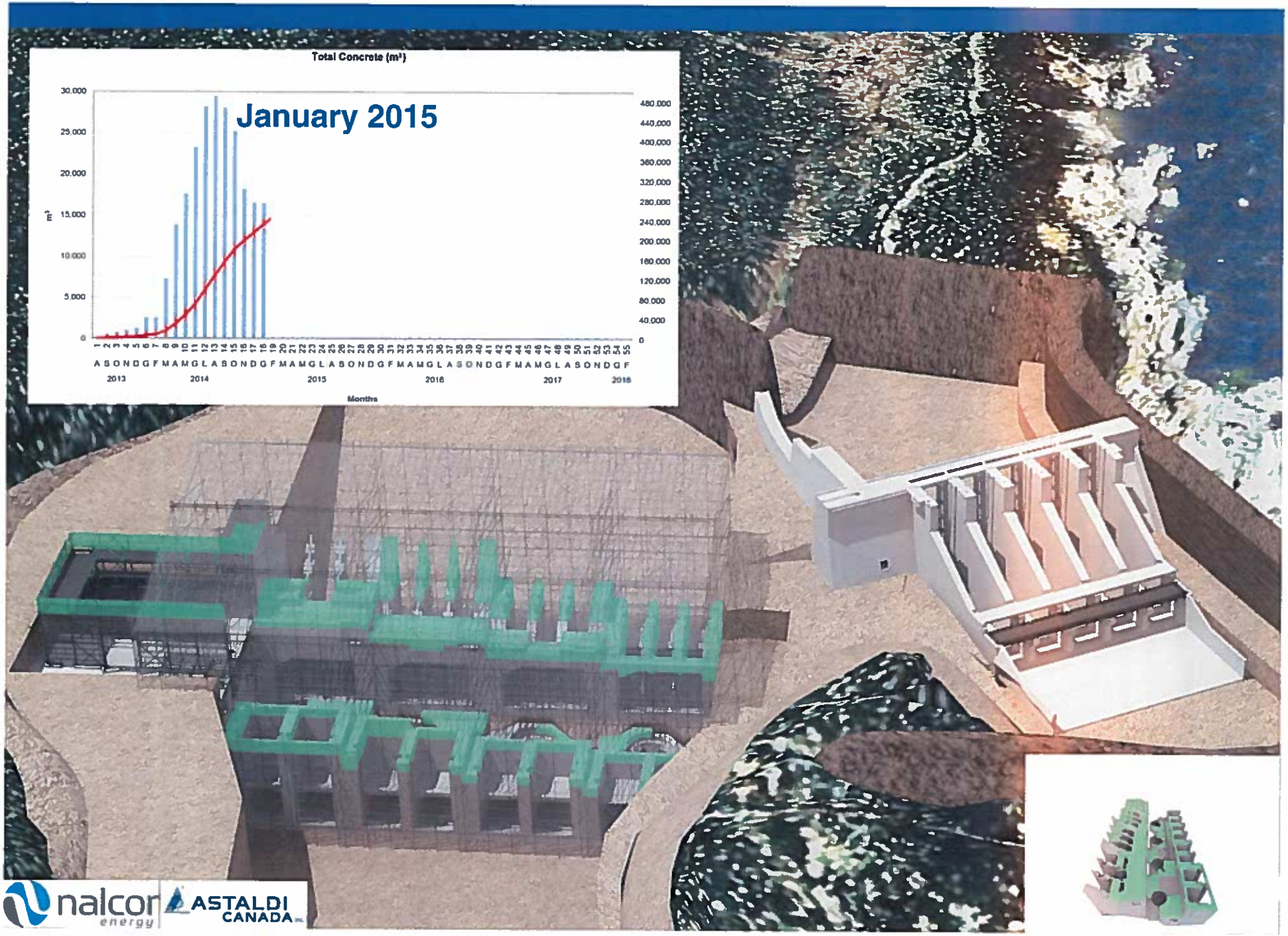
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
January 2015
30,000
25,000
20,000
15,000
10,000
5,000
0
m³
480,000
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400,000
360,000
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280,000
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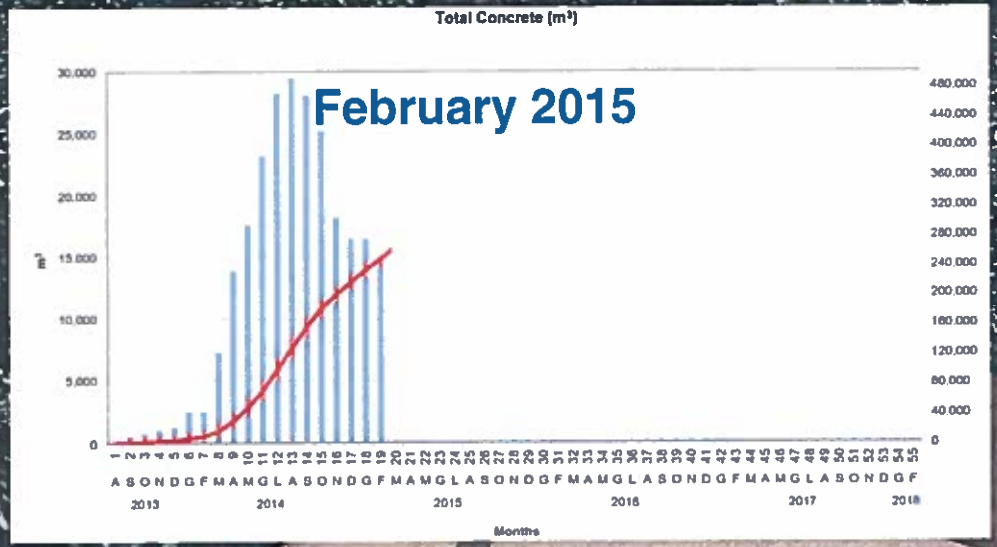
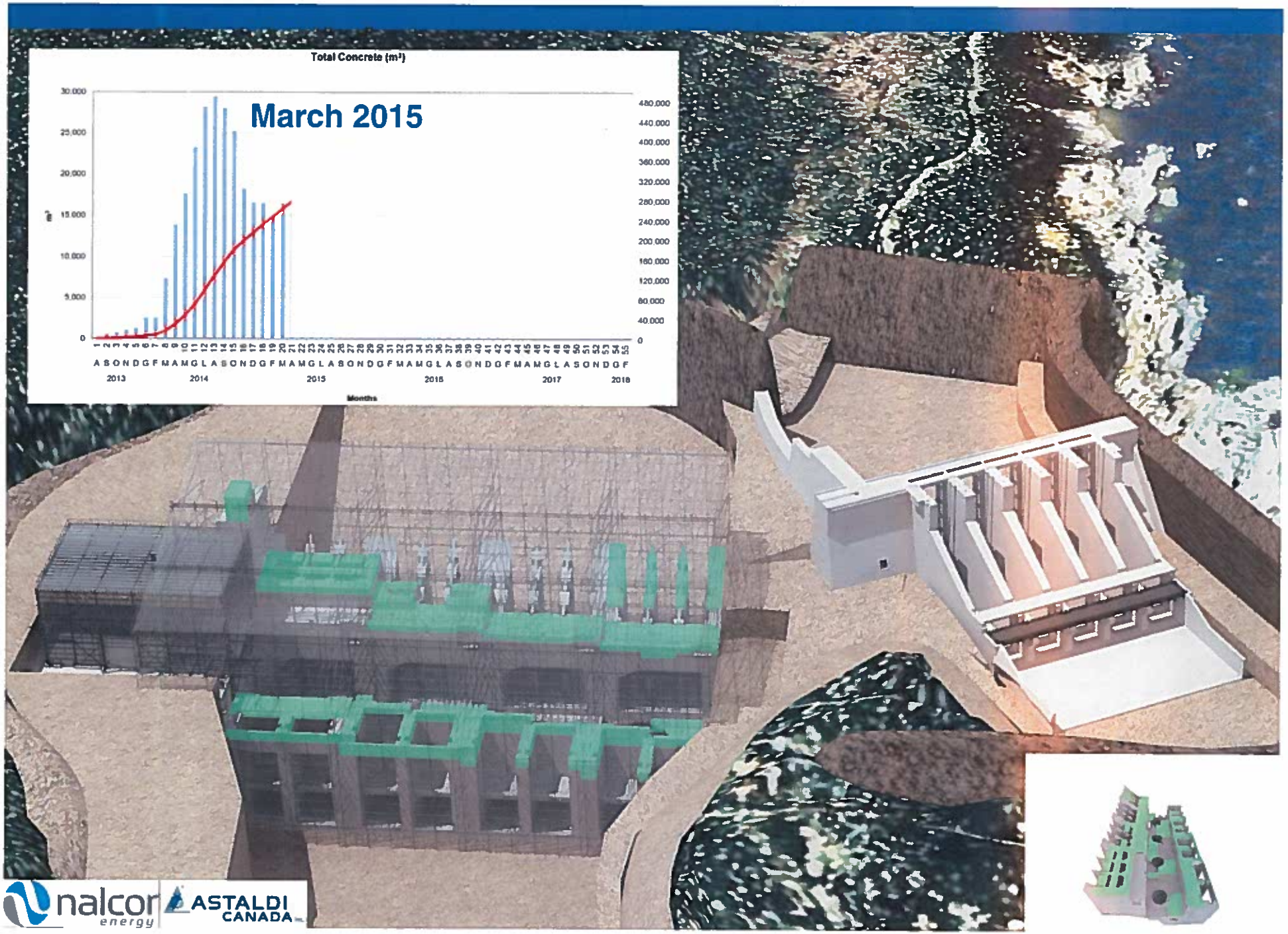
Months
nalcor energy
ASTALDI CANADA

Milestone M4 – 15 Feb. 2015



nalcor energy | ASTALDI CANADA


Total Concrete (m³)
March 2015
30,000
25,000
20,000
15,000
10,000
5,000
0
480,000
440,000
400,000
360,000
320,000
280,000
240,000
200,000
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A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F
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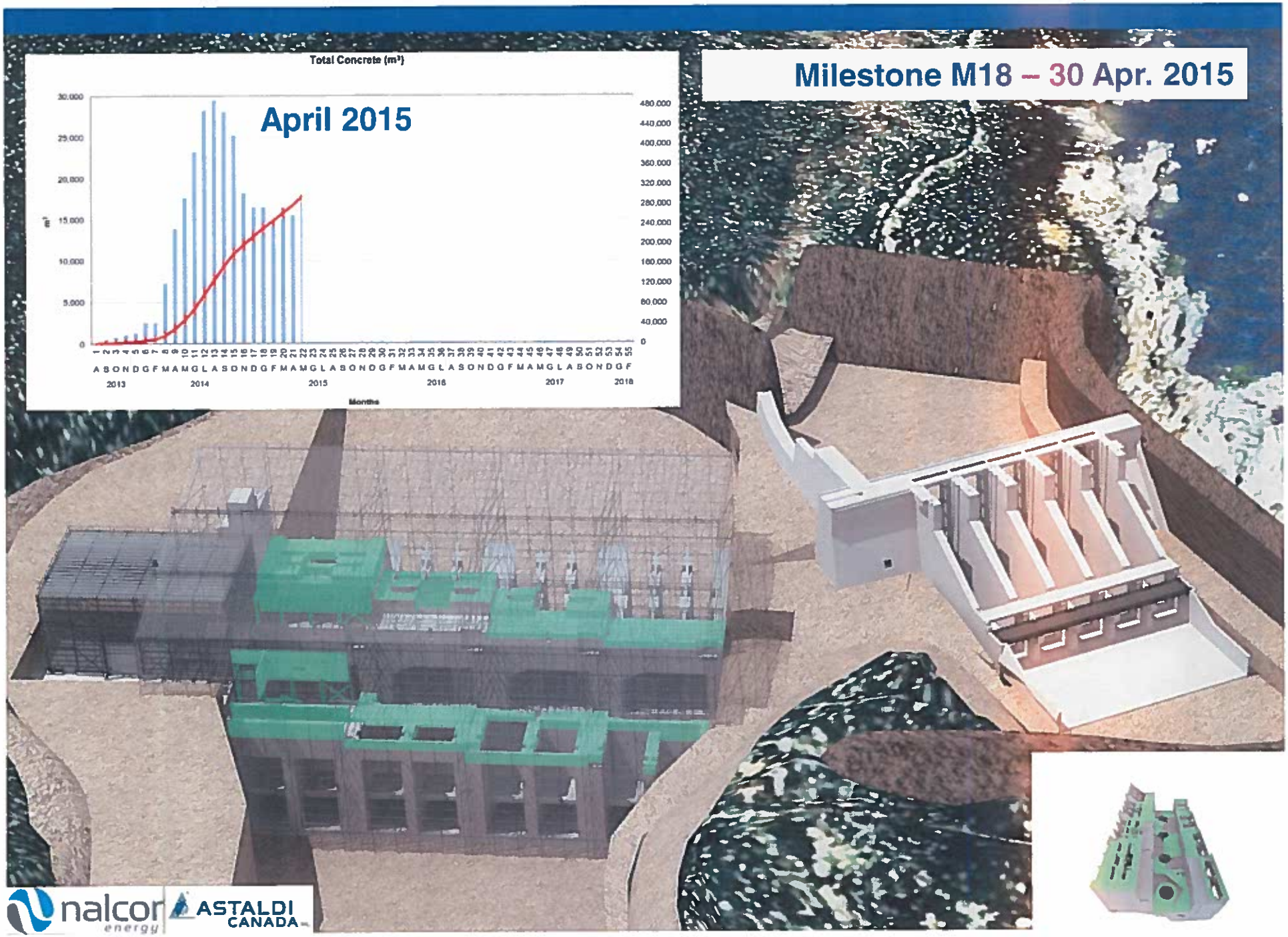
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
April 2015
Milestone M18 – 30 Apr. 2015
Months
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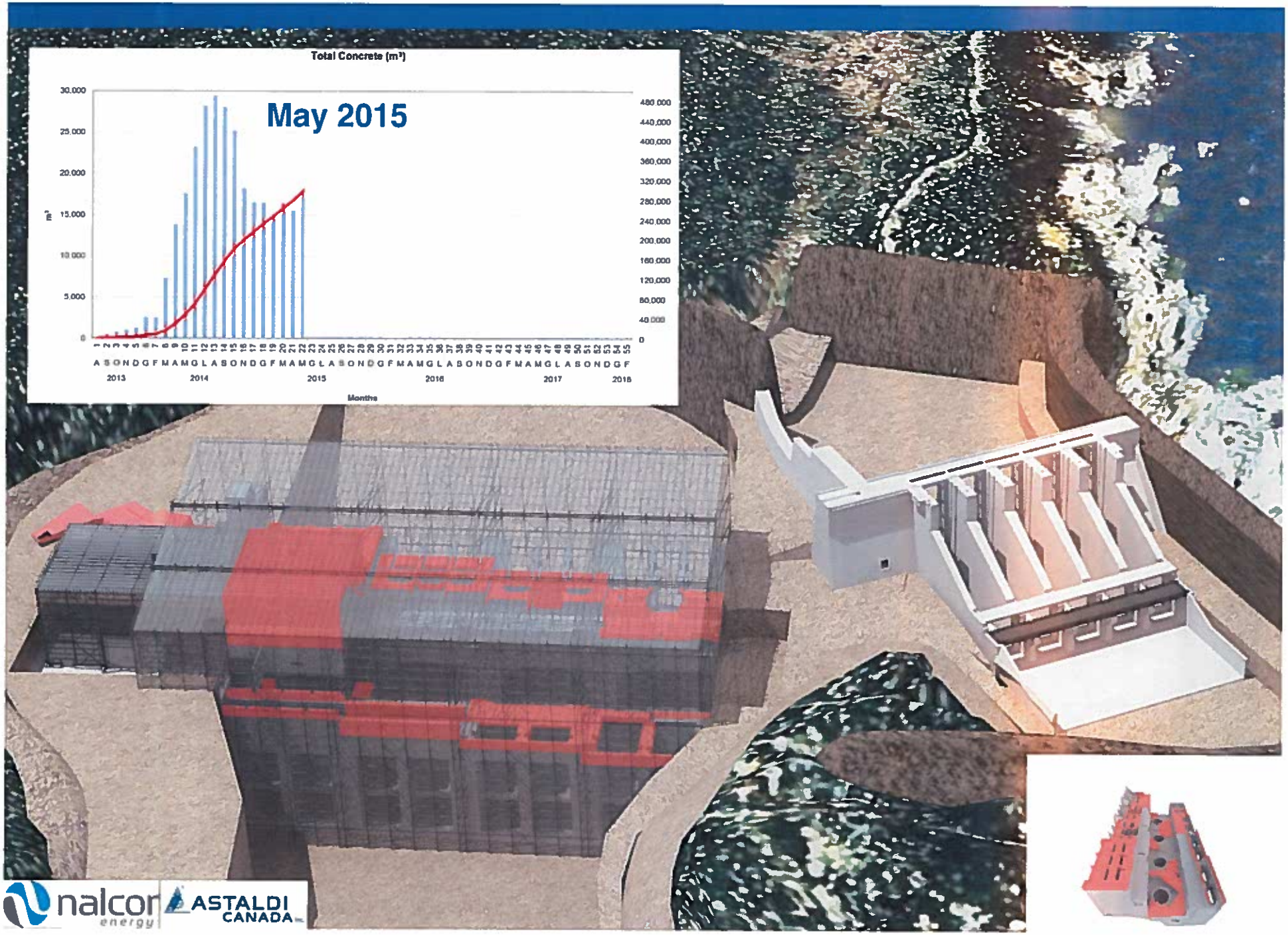
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
May 2015
m³
Months
2013
2014
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2016
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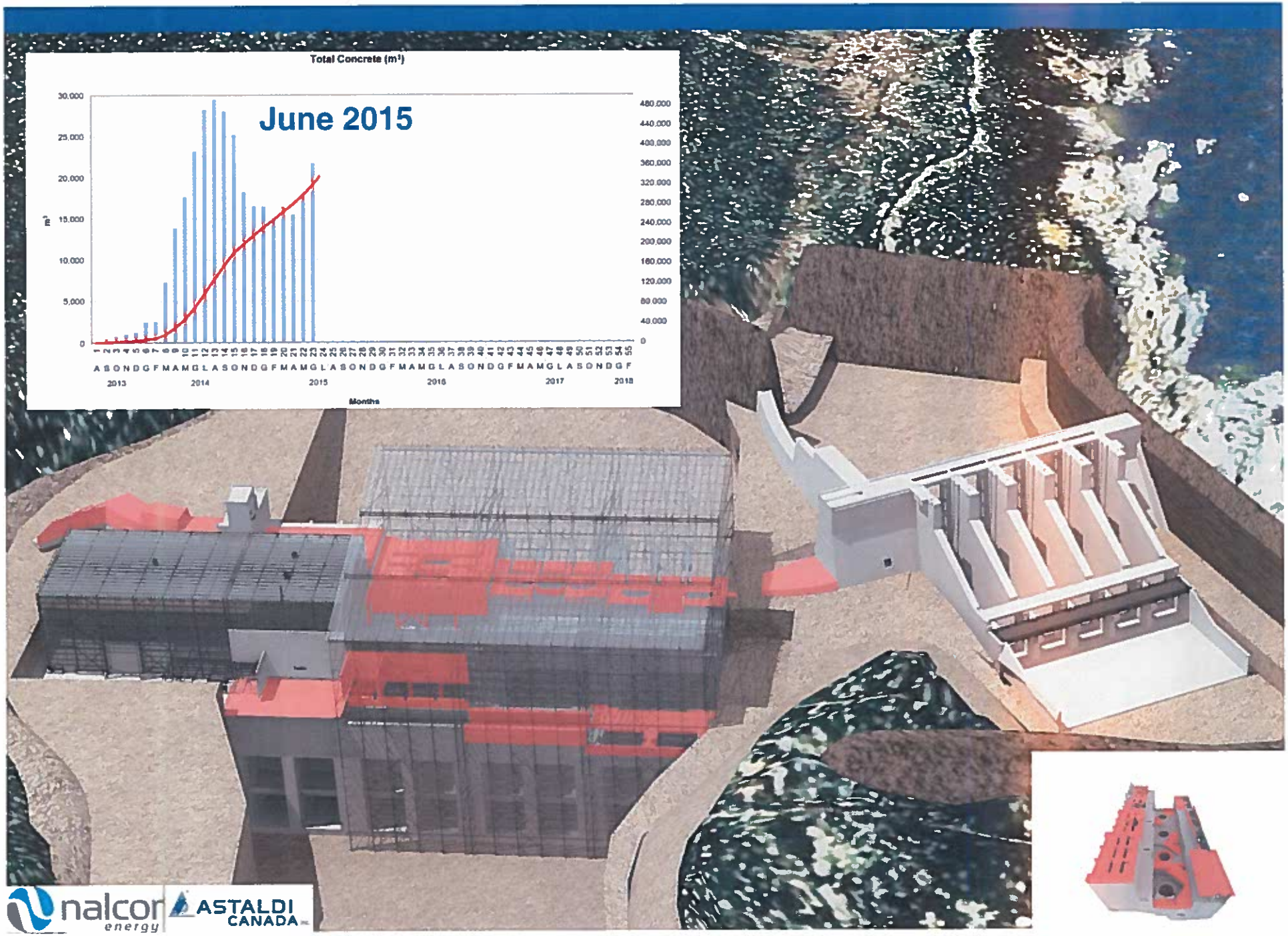
2018
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
June 2015
30,000
25,000
20,000
15,000
10,000
5,000
0
480,000
440,000
400,000
360,000
320,000
280,000
240,000
200,000
160,000
120,000
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40,000
0
m³
A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F
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Months
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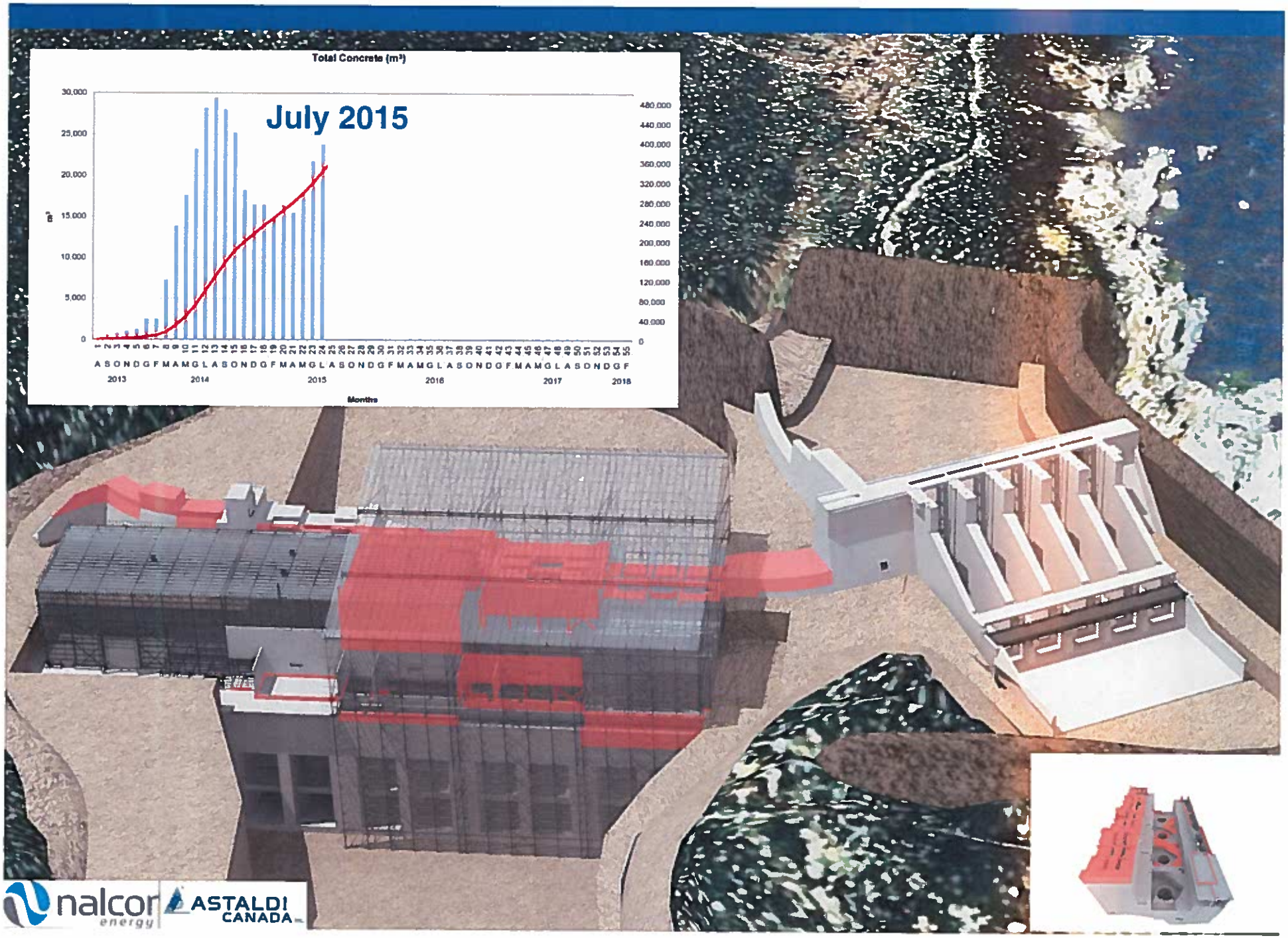
ASTALDI CANADA


Total Concrete (m³)
July 2015
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25,000
20,000
15,000
10,000
5,000
0
480,000
440,000
400,000
360,000
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280,000
240,000
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160,000
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A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F
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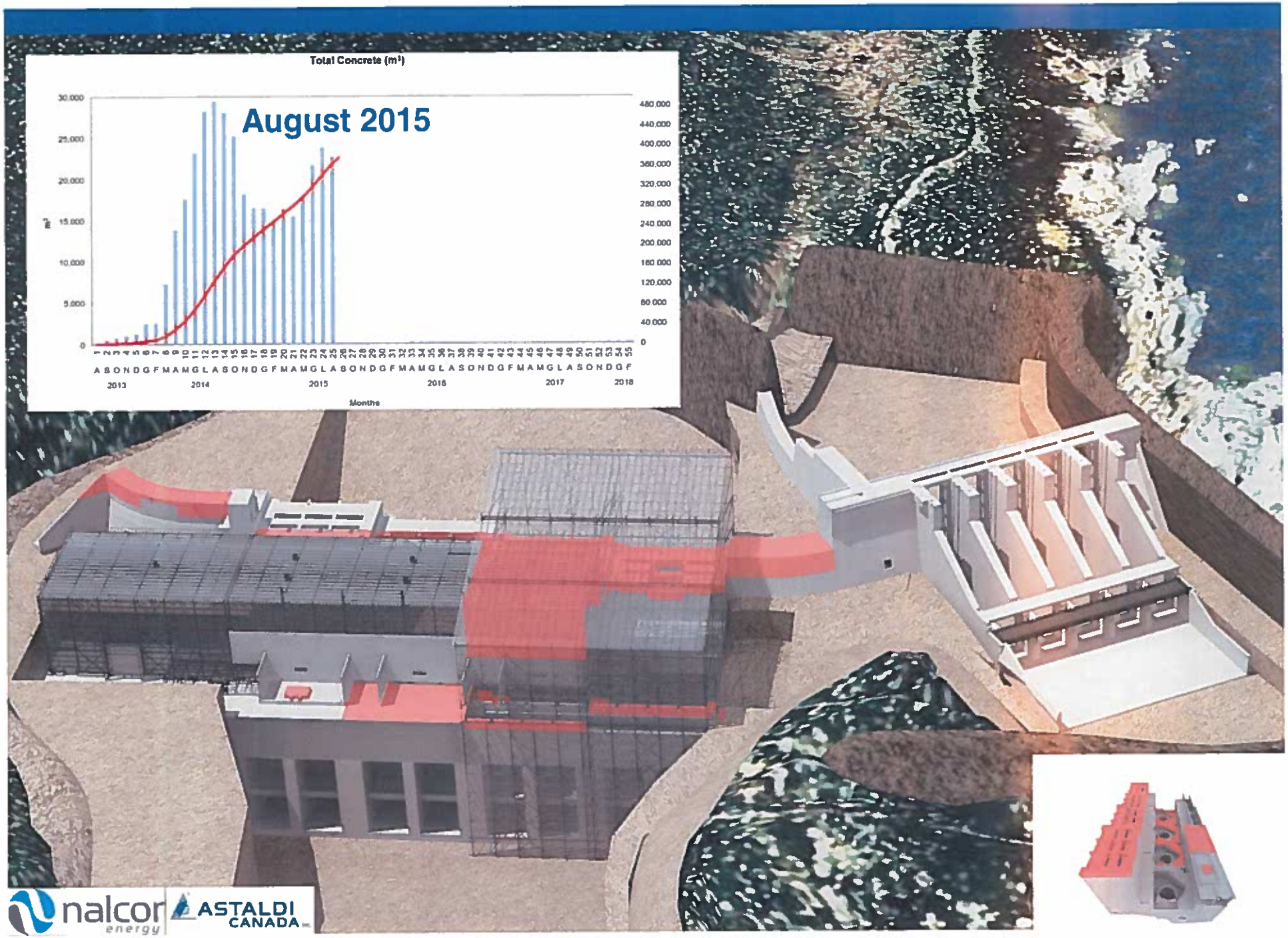
Total Concrete (m³)
August 2015
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25,000
20,000
15,000
10,000
5,000
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480,000
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A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F
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Months
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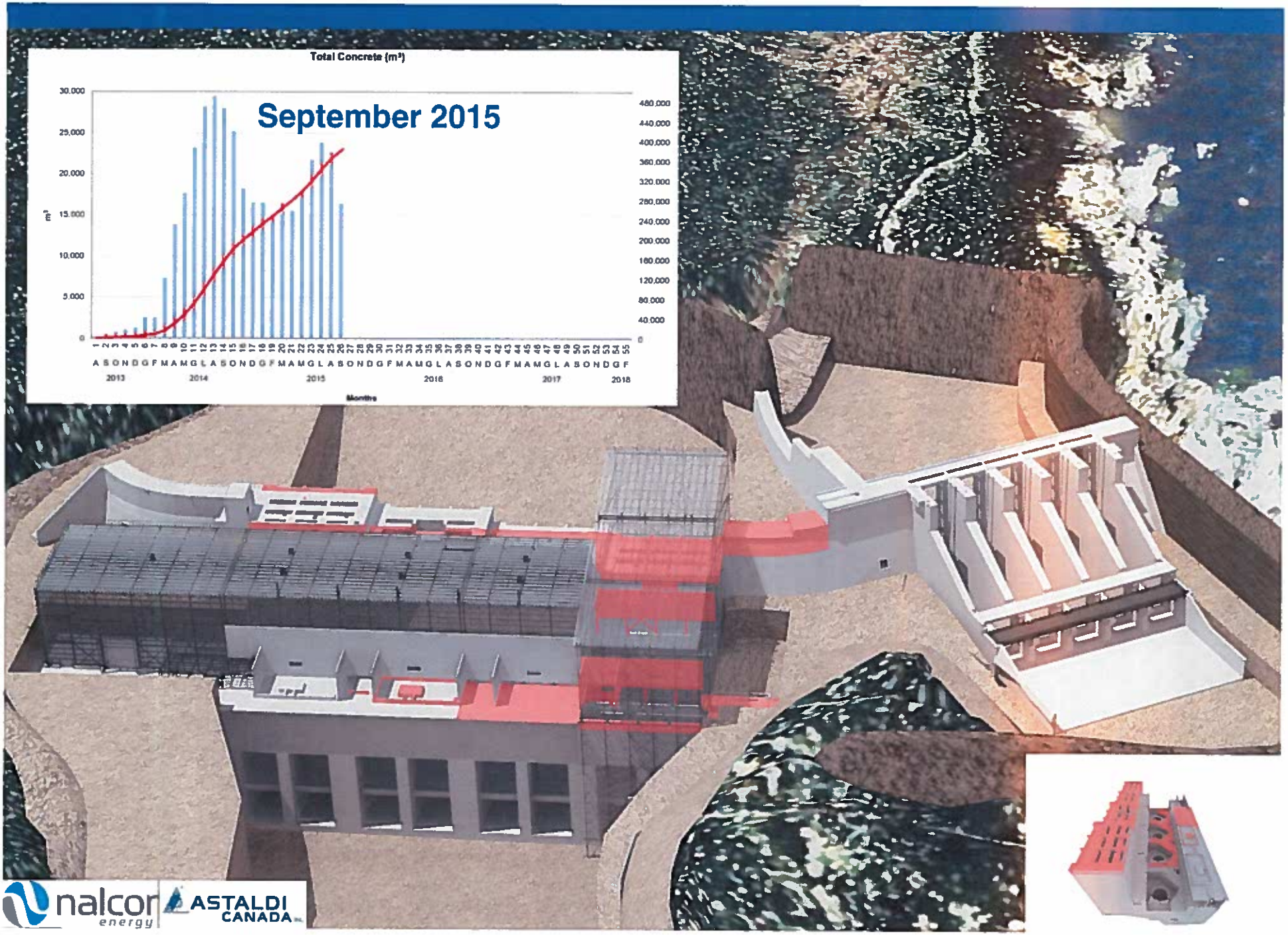
ASTALDI CANADA


Total Concrete (m³)
September 2015
m³
30,000
25,000
20,000
15,000
10,000
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480,000
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A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F
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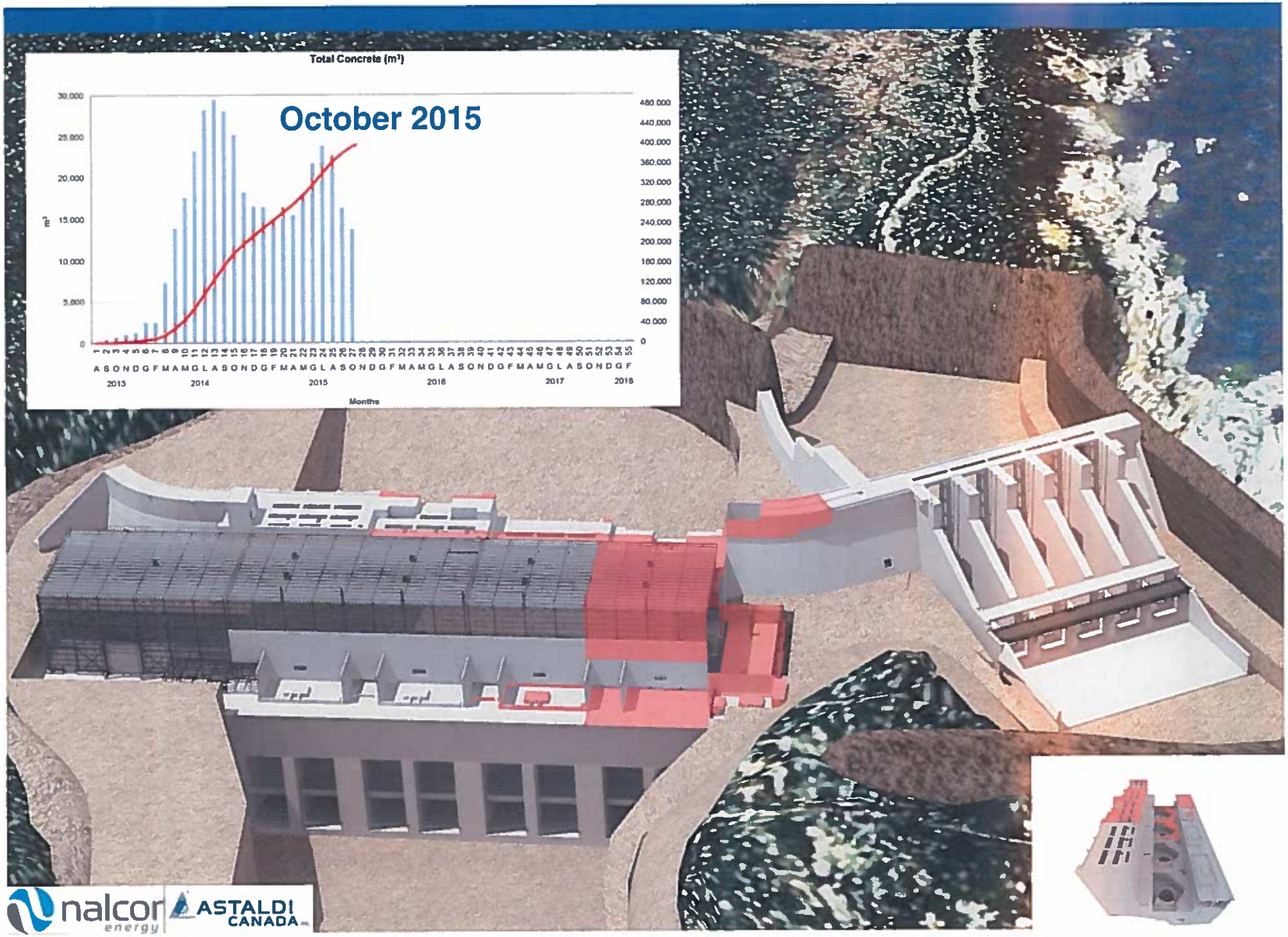
ASTALDI CANADA


Total Concrete (m³)
October 2015
m³
Months
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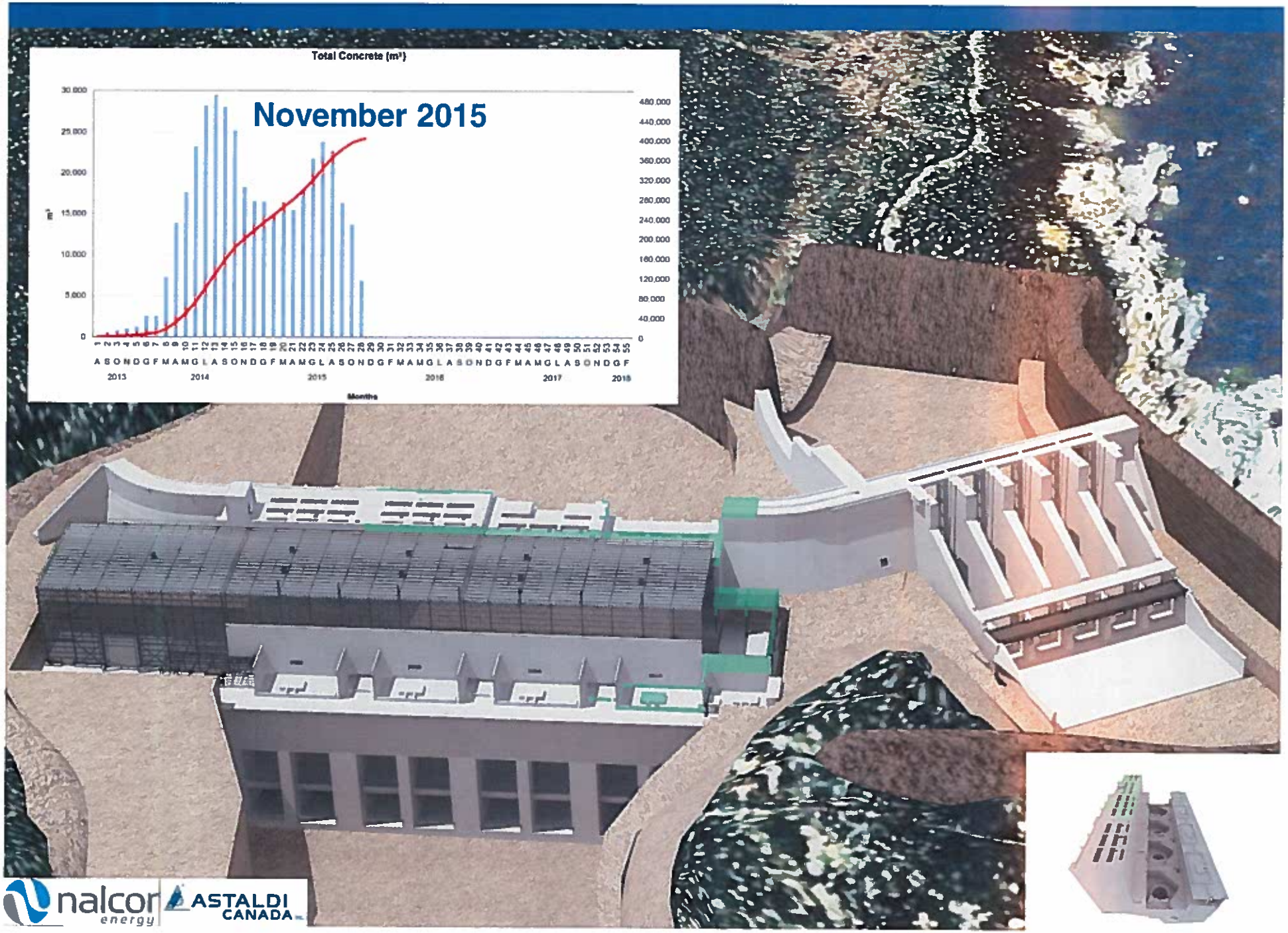
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
November 2015
30,000
25,000
20,000
15,000
10,000
5,000
0
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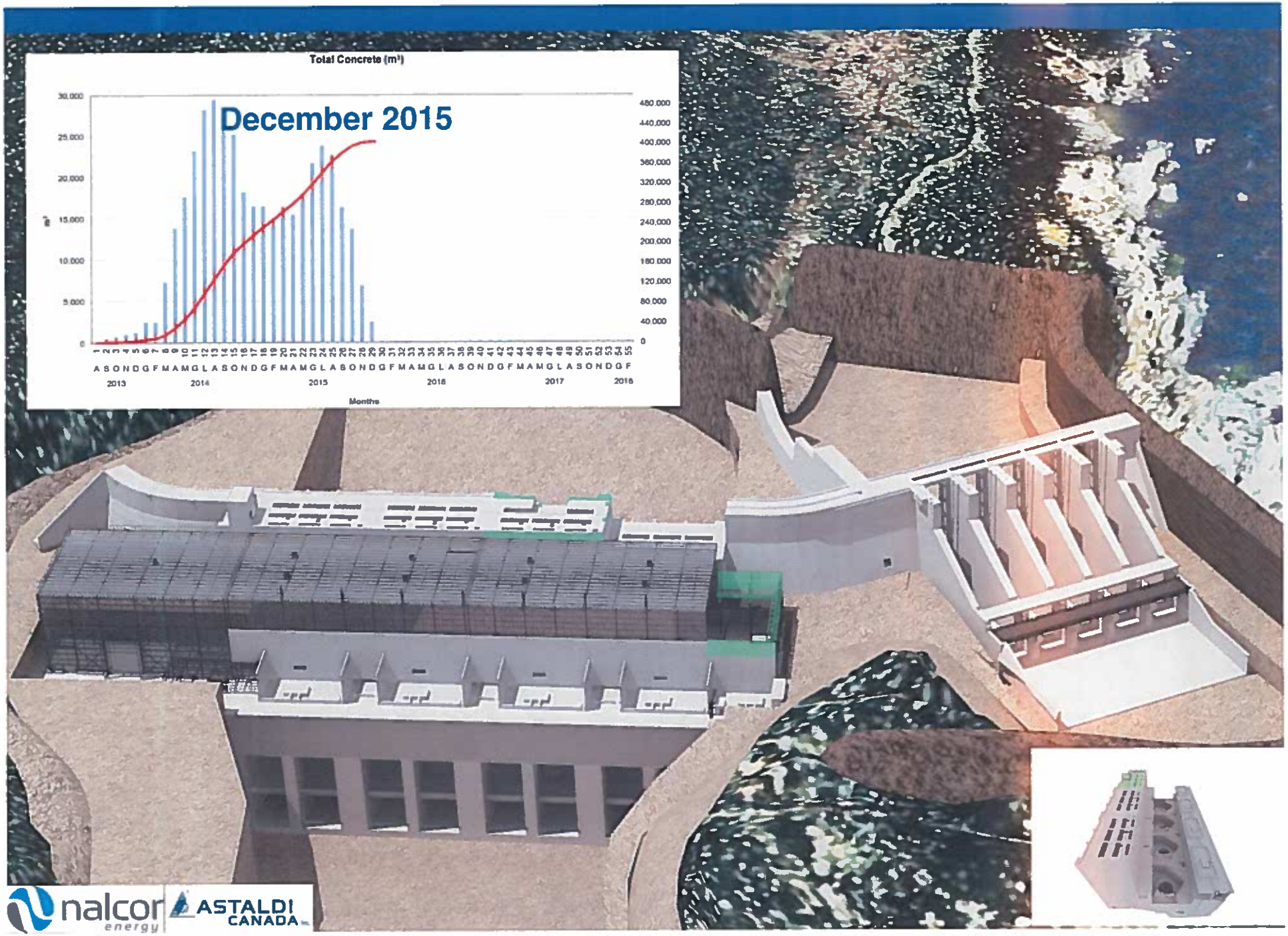
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
December 2015
30,000
25,000
20,000
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10,000
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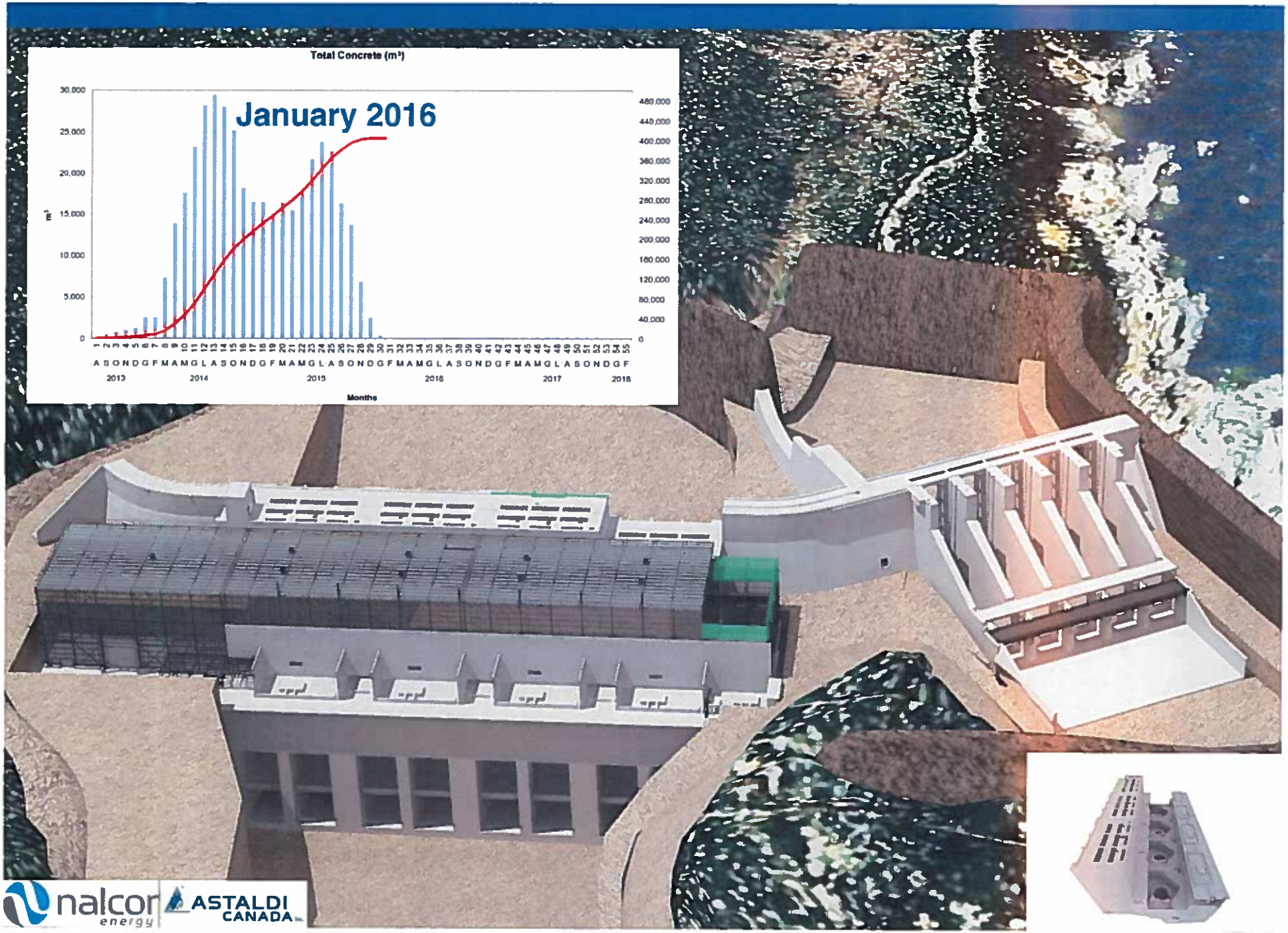
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
January 2016
30,000
25,000
20,000
15,000
10,000
5,000
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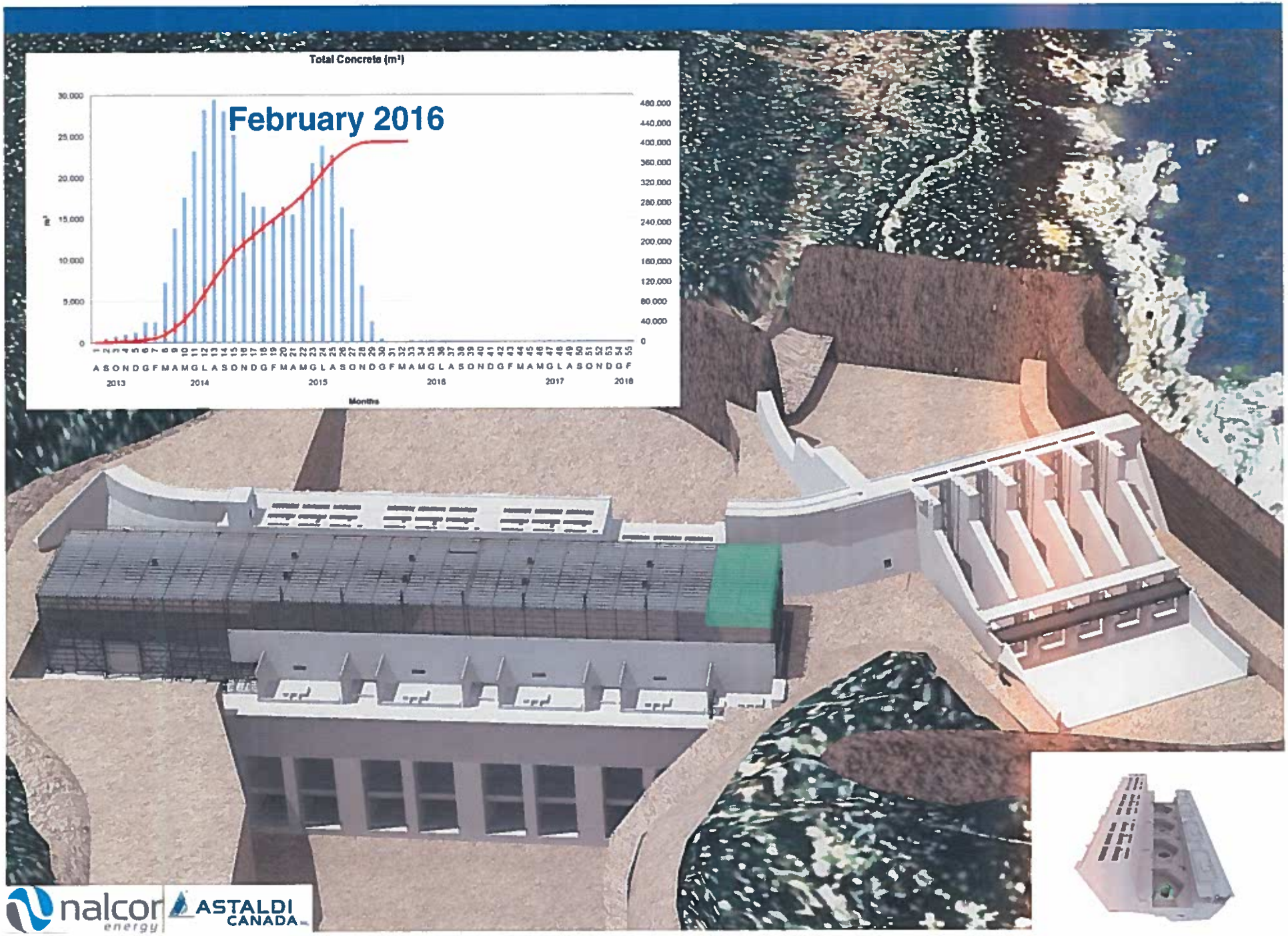
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
February 2016
30,000
25,000
20,000
15,000
10,000
5,000
0
480,000
440,000
400,000
360,000
320,000
280,000
240,000
200,000
160,000
120,000
80,000
40,000
0
m³
A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F
2013
2014
2015
2016
2017
2018
Months
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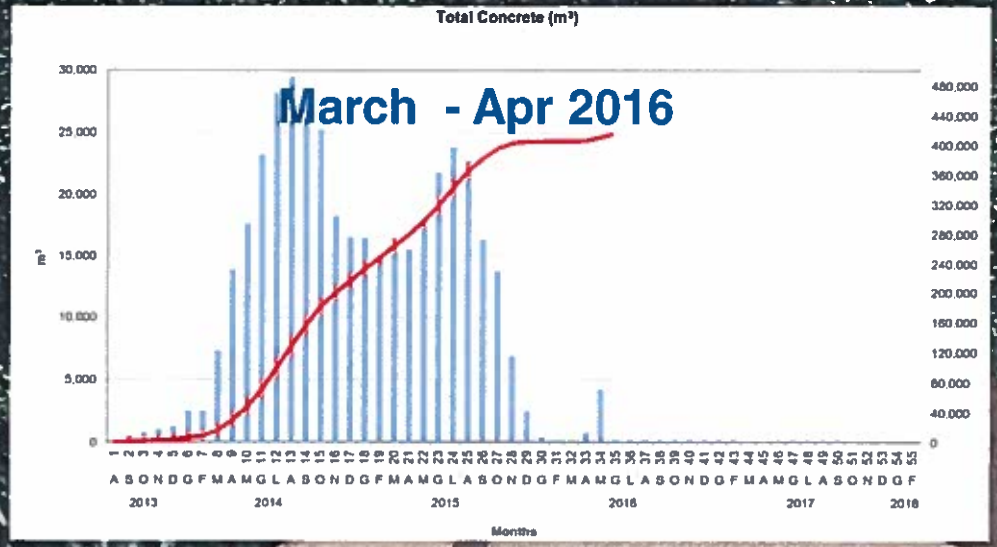
Milestone M22 – 28 Mar 2016



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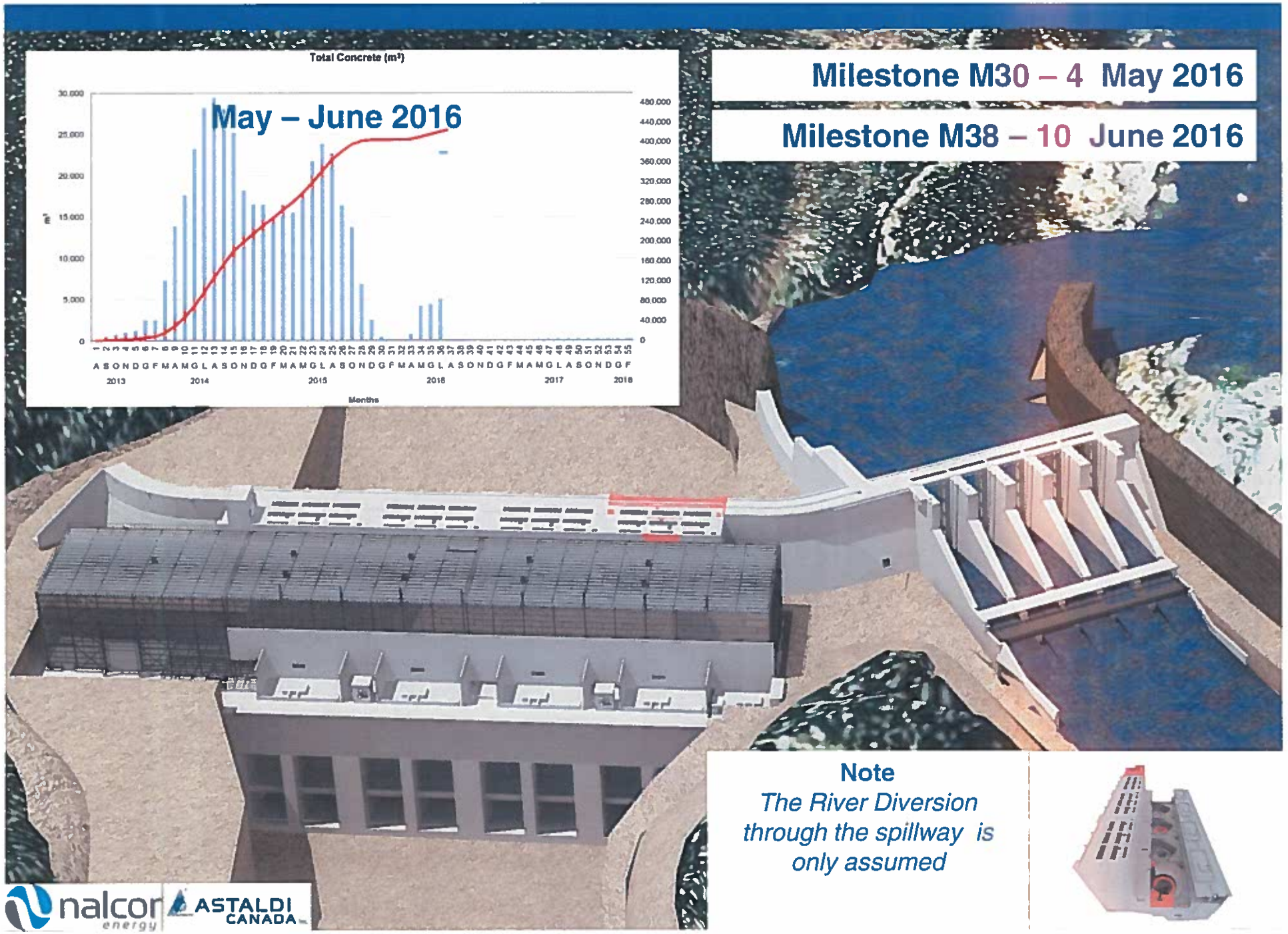
Total Concrete (m³)
May – June 2016
Months
Milestone M30 – 4 May 2016
Milestone M38 – 10 June 2016
Note
The River Diversion through the spillway is only assumed
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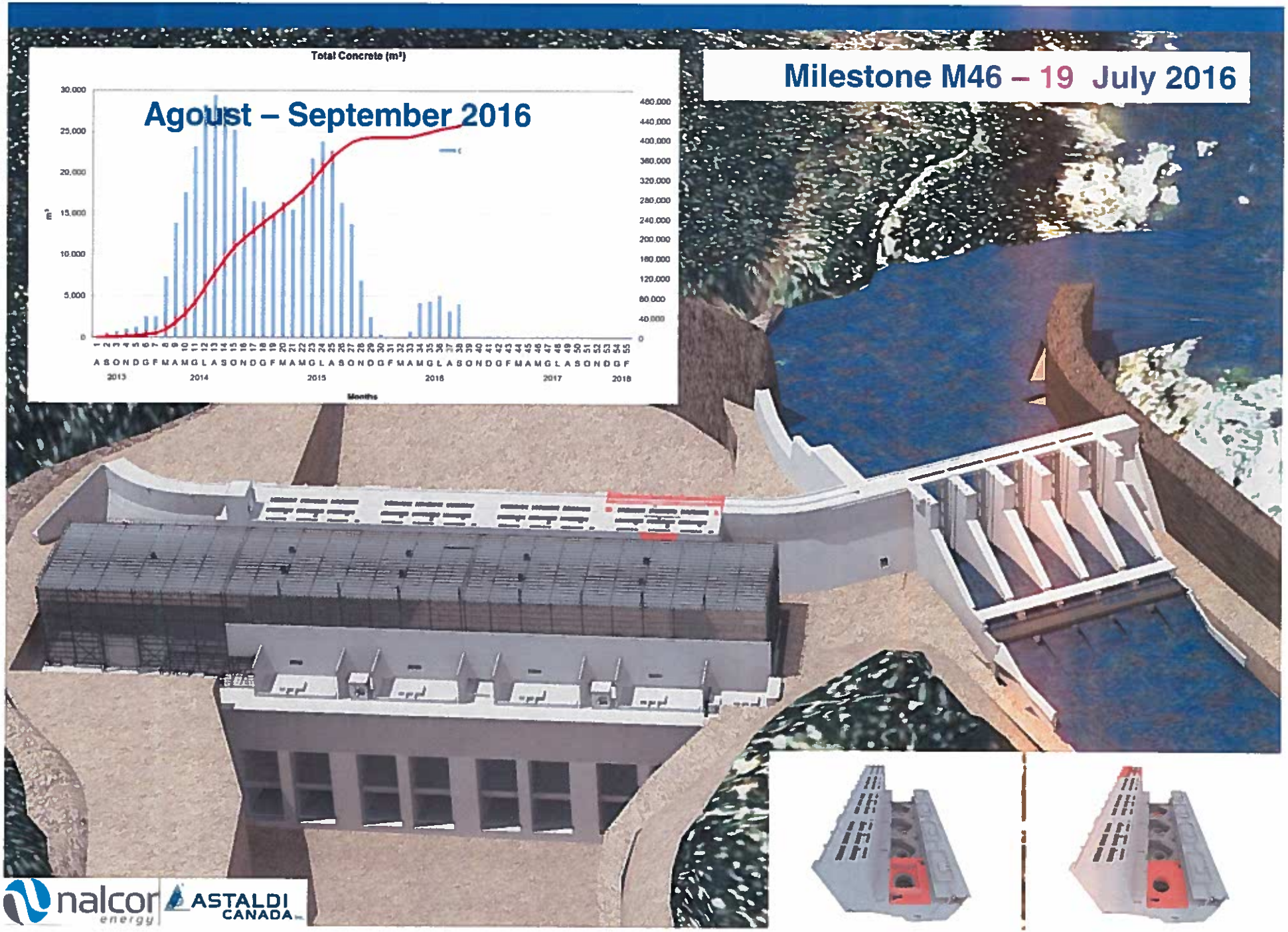
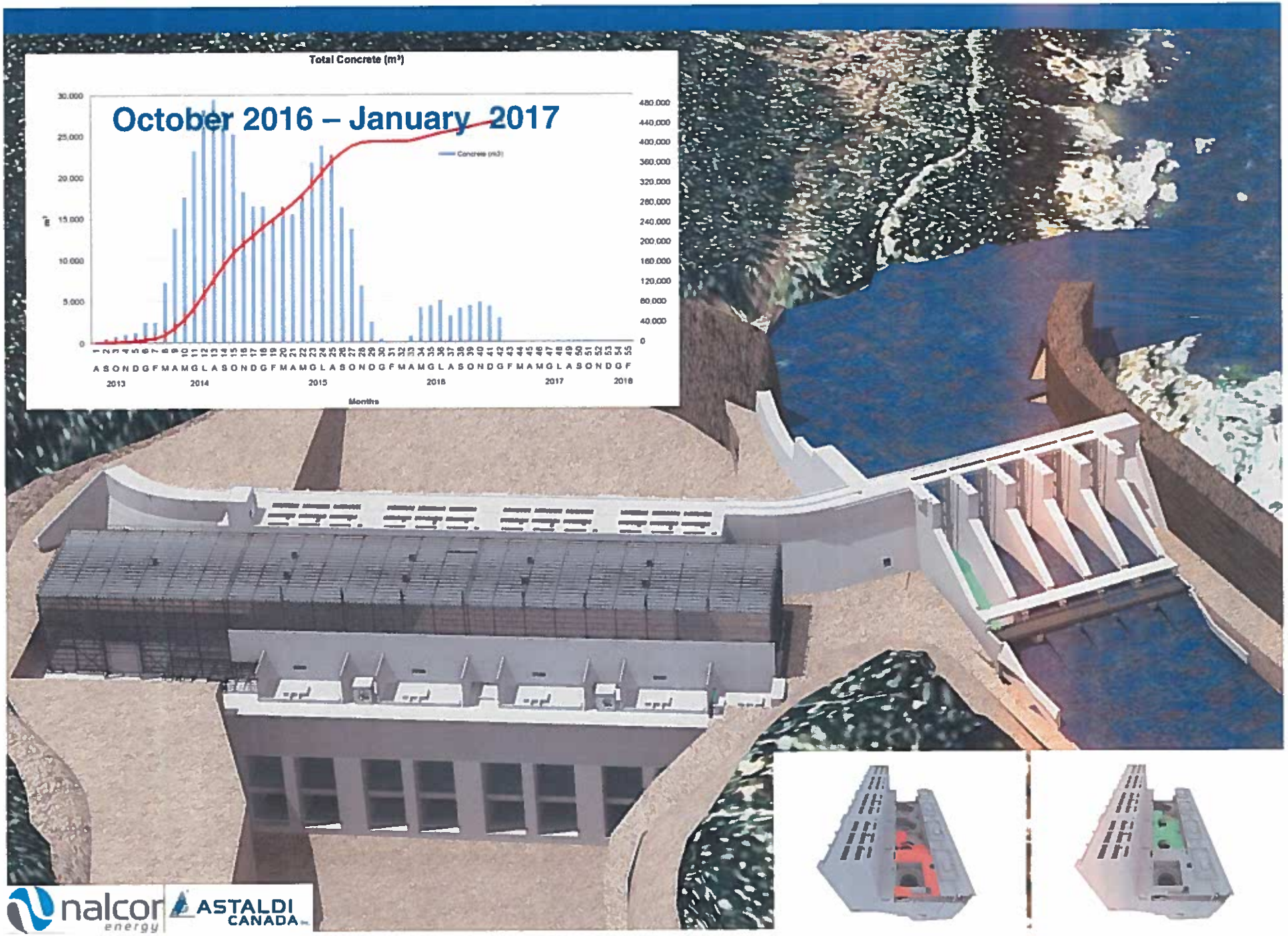
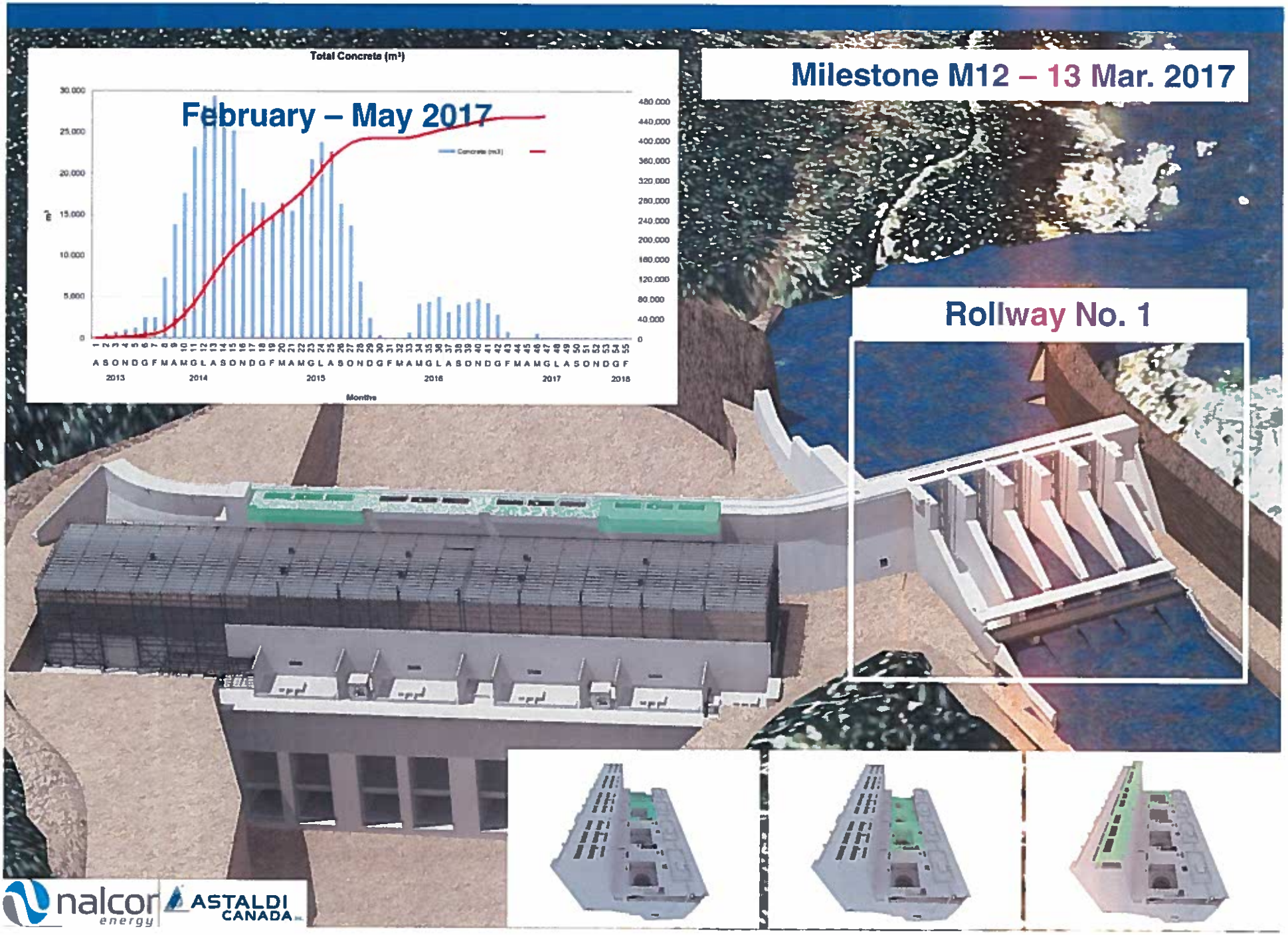

Total Concrete (m³)
Agoust – September 2016
Milestone M46 – 19 July 2016
30,000
25,000
20,000
15,000
10,000
5,000
0
m³
460,000
440,000
400,000
360,000
320,000
280,000
240,000
200,000
160,000
120,000
80,000
40,000
0
A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F
2013
2014
2015
2016
2017
2018
Months
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
October 2016 – January 2017
Concrete (m3)
Months
2013
2014
2015
2016
2017
2018
nalcor energy
ASTALDI CANADA


Total Concrete (m³)
February – May 2017
Concrete (m3)
m³
Months
2013
2014
2015
2016
2017
2018
Milestone M12 – 13 Mar. 2017
Rollway No. 1
nalcor energy
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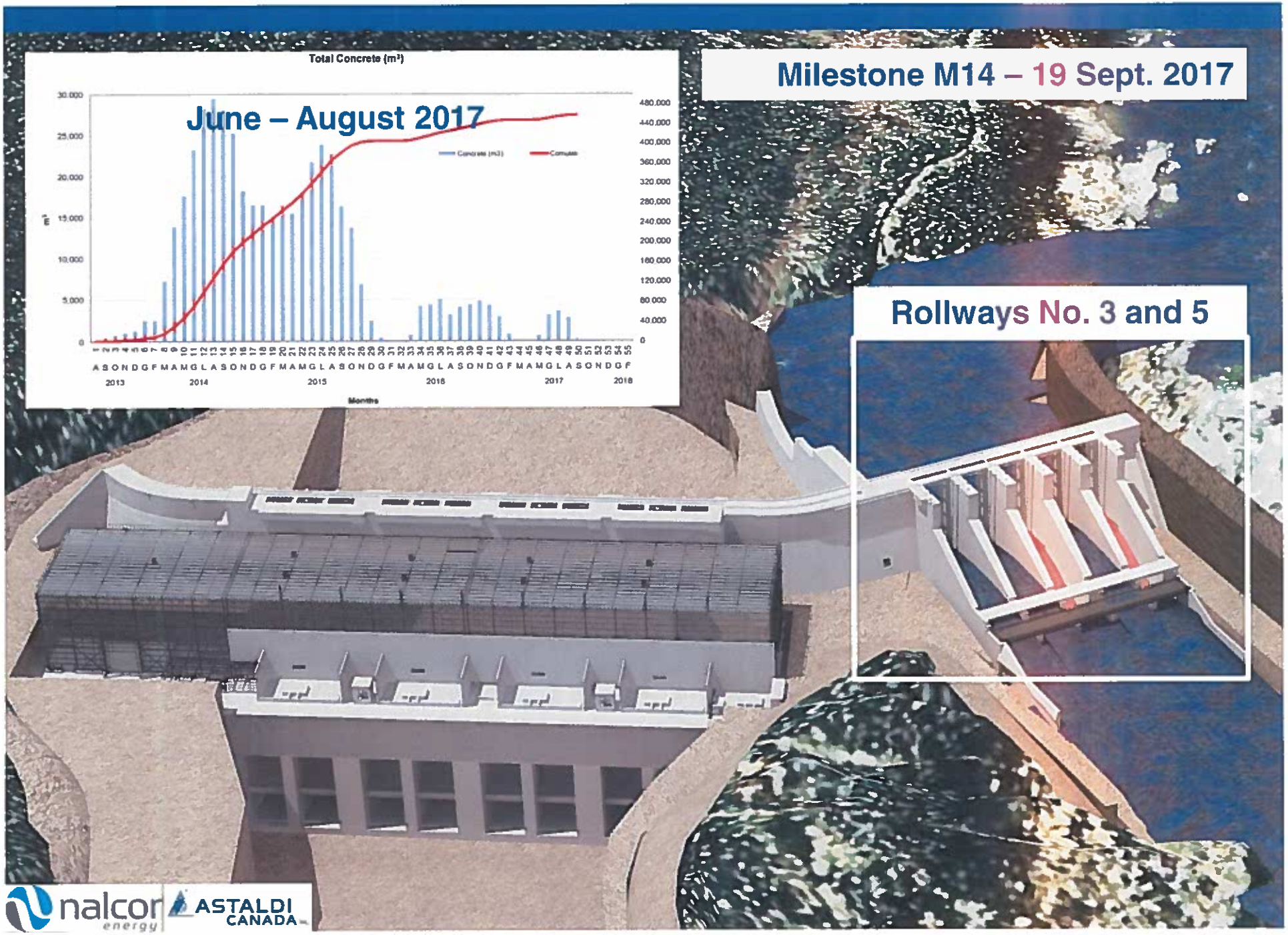
Total Concrete (m³)
June – August 2017
Milestone M14 – 19 Sept. 2017
Rollways No. 3 and 5
Months
2013
2014
2015
2016
2017
2018
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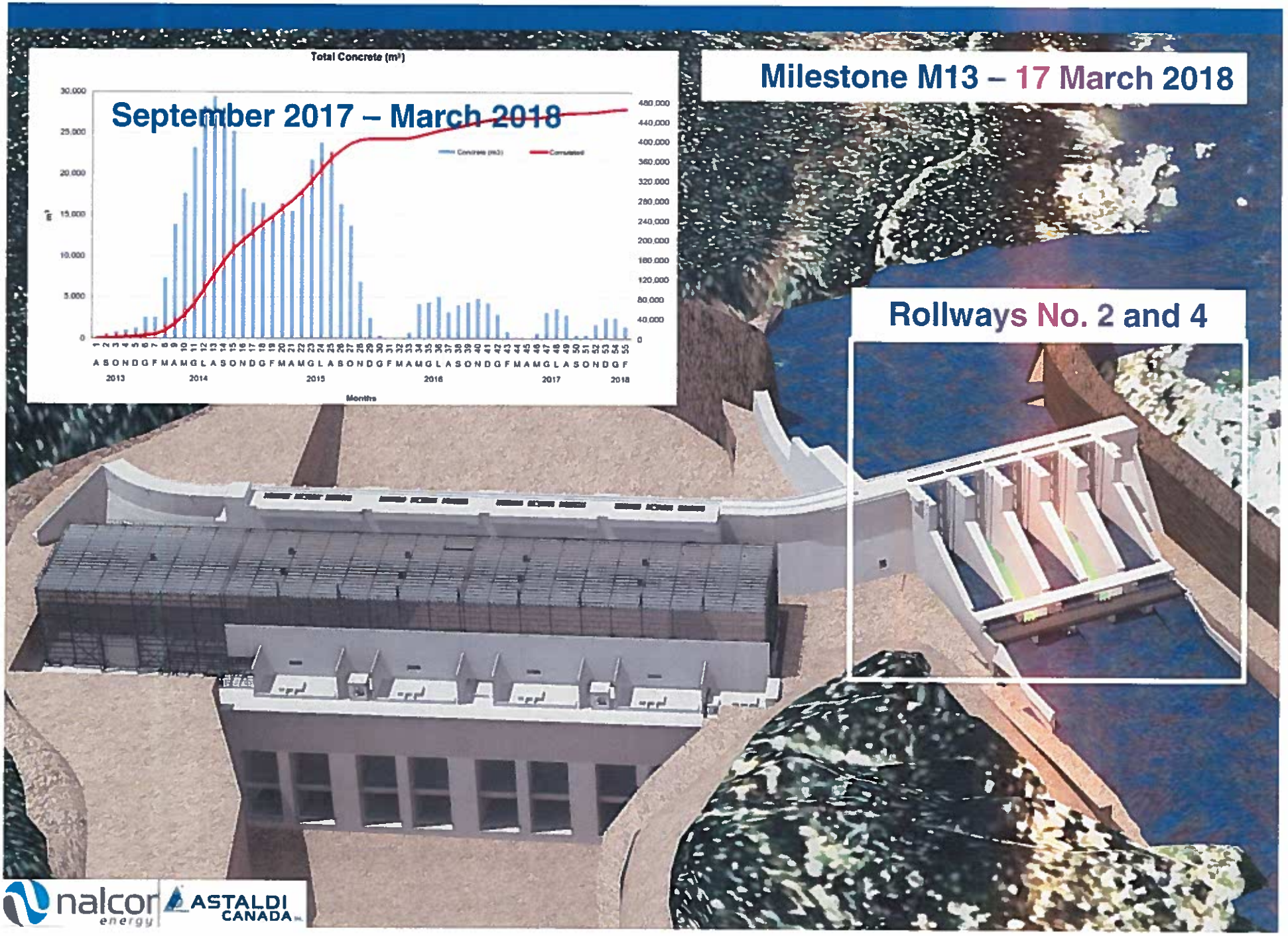
ASTALDI CANADA


Total Concrete (m³)
September 2017 – March 2018
Concrete (m3)
Cumulated
Months
2013
2014
2015
2016
2017
2018
Milestone M13 – 17 March 2018
Rollways No. 2 and 4
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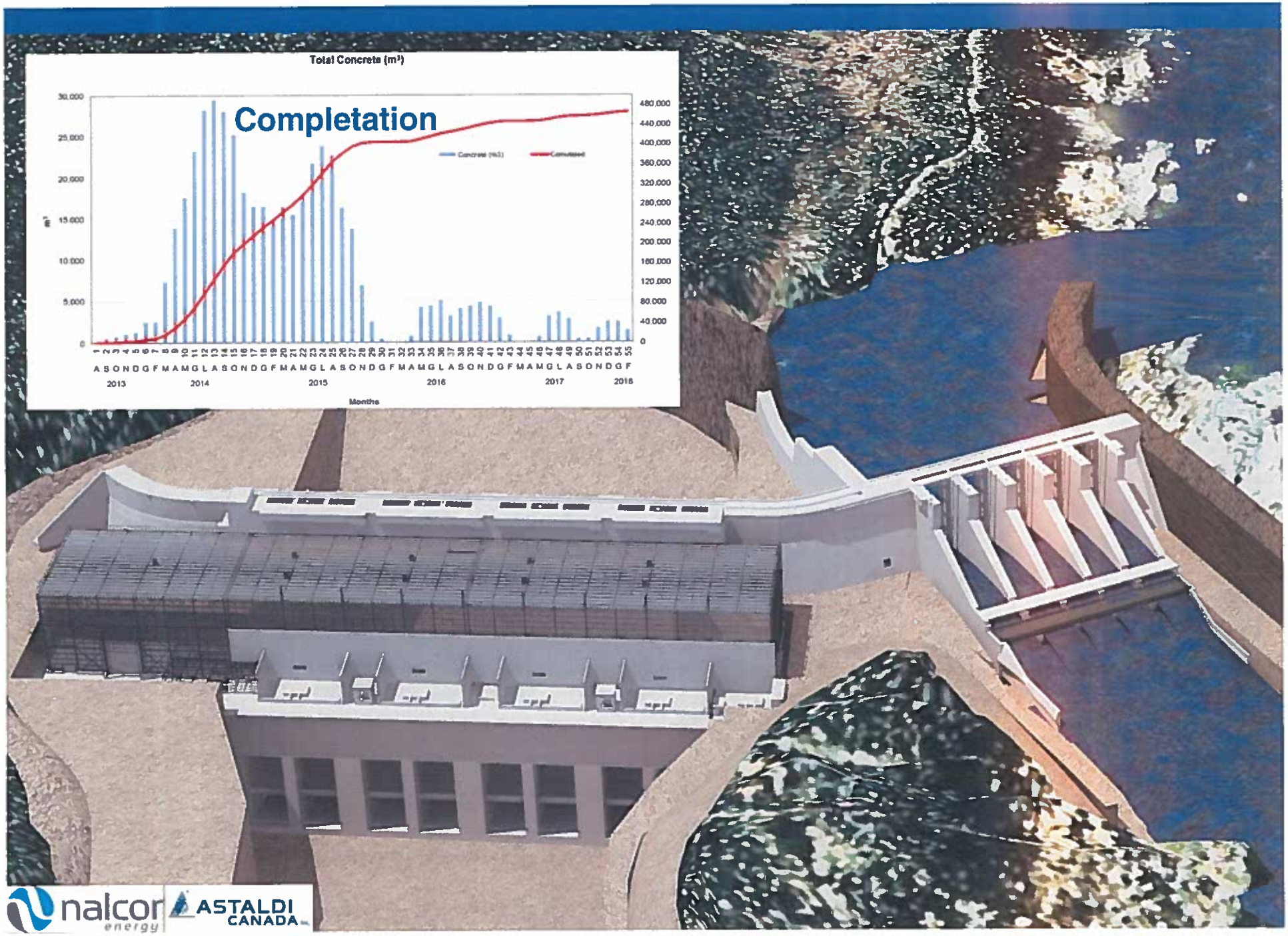
ASTALDI CANADA


Total Concrete (m³)
Completation
Concrete (m3)
Cumulated
m³
30,000
25,000
20,000
15,000
10,000
5,000
0
480,000
440,000
400,000
360,000
320,000
280,000
240,000
200,000
160,000
120,000
80,000
40,000
0
A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F M A M G L A S O N D G F
2013
2014
2015
2016
2017
2018
Months
nalcor energy
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6. Project Execution Plan

Astaldi strategy

Primary selection with back-up plan

- Self-perform all the major activities (formwork, concrete placement): Intake, Powerhouse, Spillway, Dams
- Draw on qualified subcontractors for specific support on the mentioned activities (special formworks, etc..)
- Within Sept. 22nd 2013 will be finalized the decision to self perform or to subcontract the Concrete supply

Subcontractors: Lafarge – Capital Ready Mix J/V
Baton Provincial - Labrador Ready Mix

6. Project Execution Plan

Astaldi strategy

Subcontract the reinforcement steel

Subcontractors: **AGF**
Harris rebar
Salit Steel

Subcontract the structural steel

Subcontractors: ADF
Supermetal Structures
Salit Steel

6. Project Execution Plan

Astaldi strategy

Subcontract the electrical and mechanical works

Subcontractors:	Black and McDonald	Plombaction
	Pennacon	JSM Electrical
	Cahill &Company	

Subcontract the drilling and ground treatment works

Subcontractors:	Advanced Construction Tech
	Atlantic Underground Services
	Geo Foundation

6. Project Execution Plan

Astaldi strategy (continue)

- Strategy of transport material based on at least to different methodologies (by land and by sea)
- Detailed and careful revision of all pouring sequences, in order to guarantee the foreseen performances
- Detailed revision of the formwork methodologies, materials, sequences, requested form sets, etc..
- Engagement of Superintendents in the detailed definition of Work procedures
- Advanced training of Superintendents and Foreman prior to the start-up of the industrial production

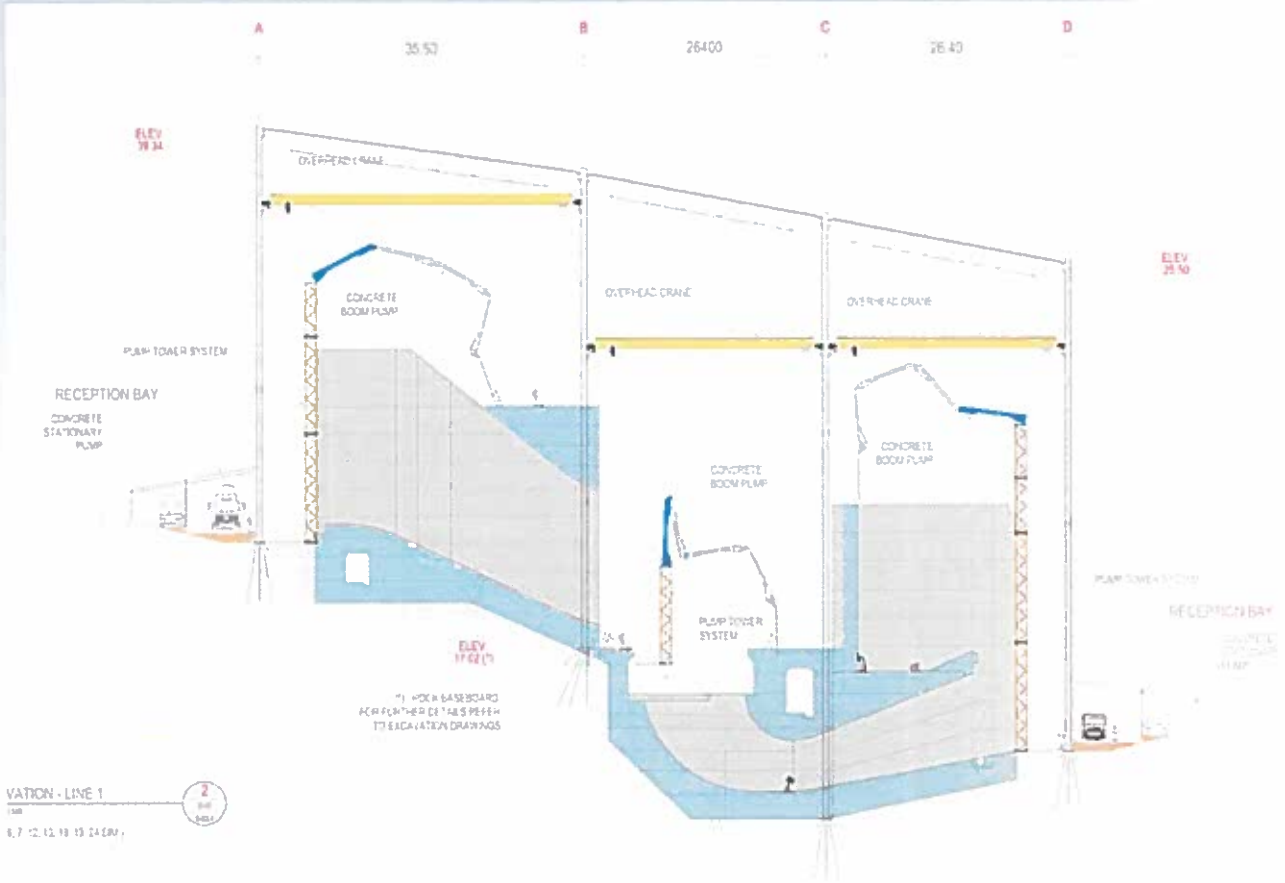
6. Project Execution Plan

Astaldi strategy (continue)

- Finalize all the efforts to reach the expected working efficiency
- Develop the ICS general design and details to increase the pouring productivity
- Develop a detailed risk analysis of the production cycles under the ICS and for the other activities
- Training of superintendent and foreman to operate under the ICS with the mean of the overhead cranes
- Training of superintendents and foreman to operate under the ICS with the mean concrete towers and boomers

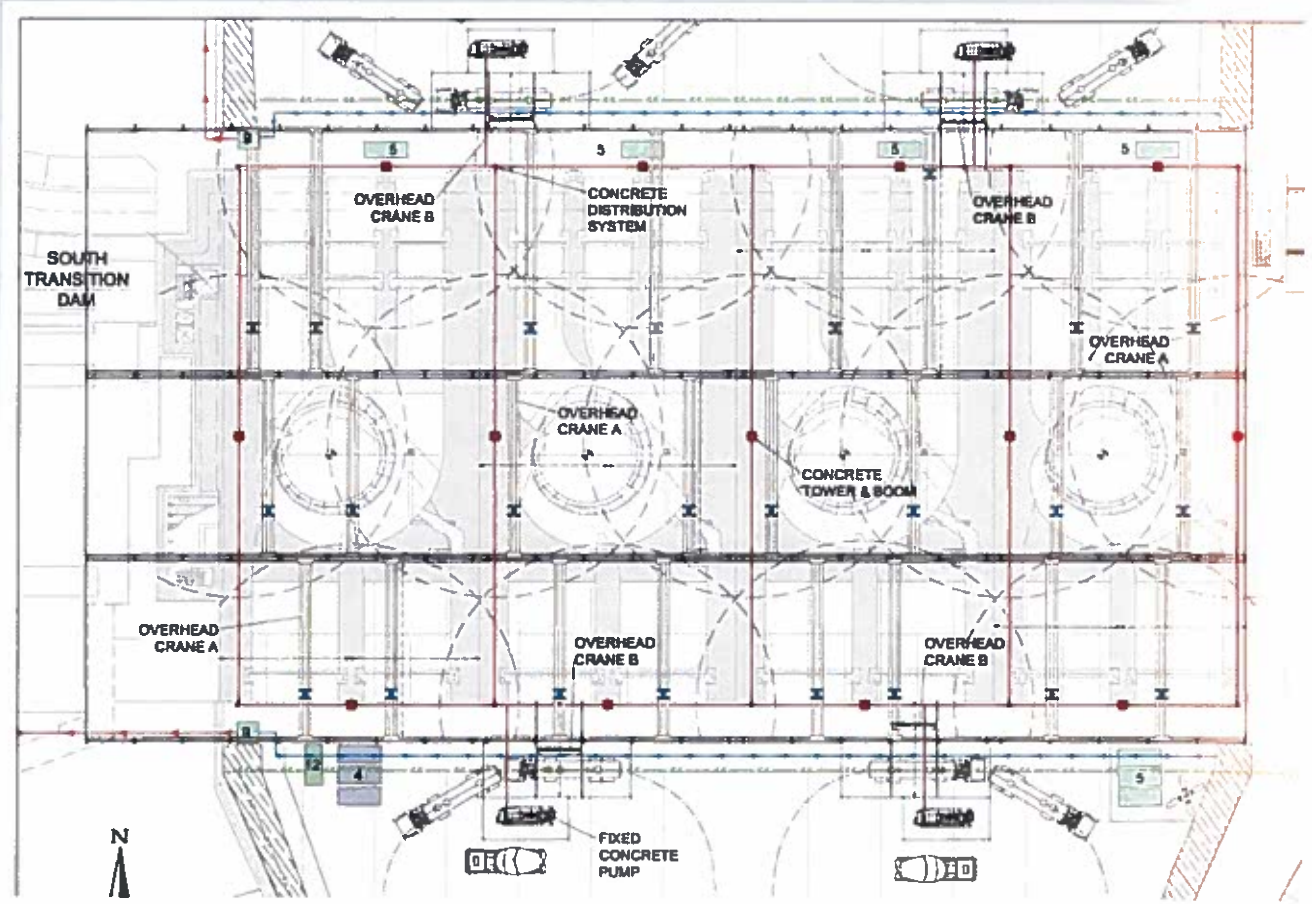
6. Project Execution Plan

Integrated Cover System



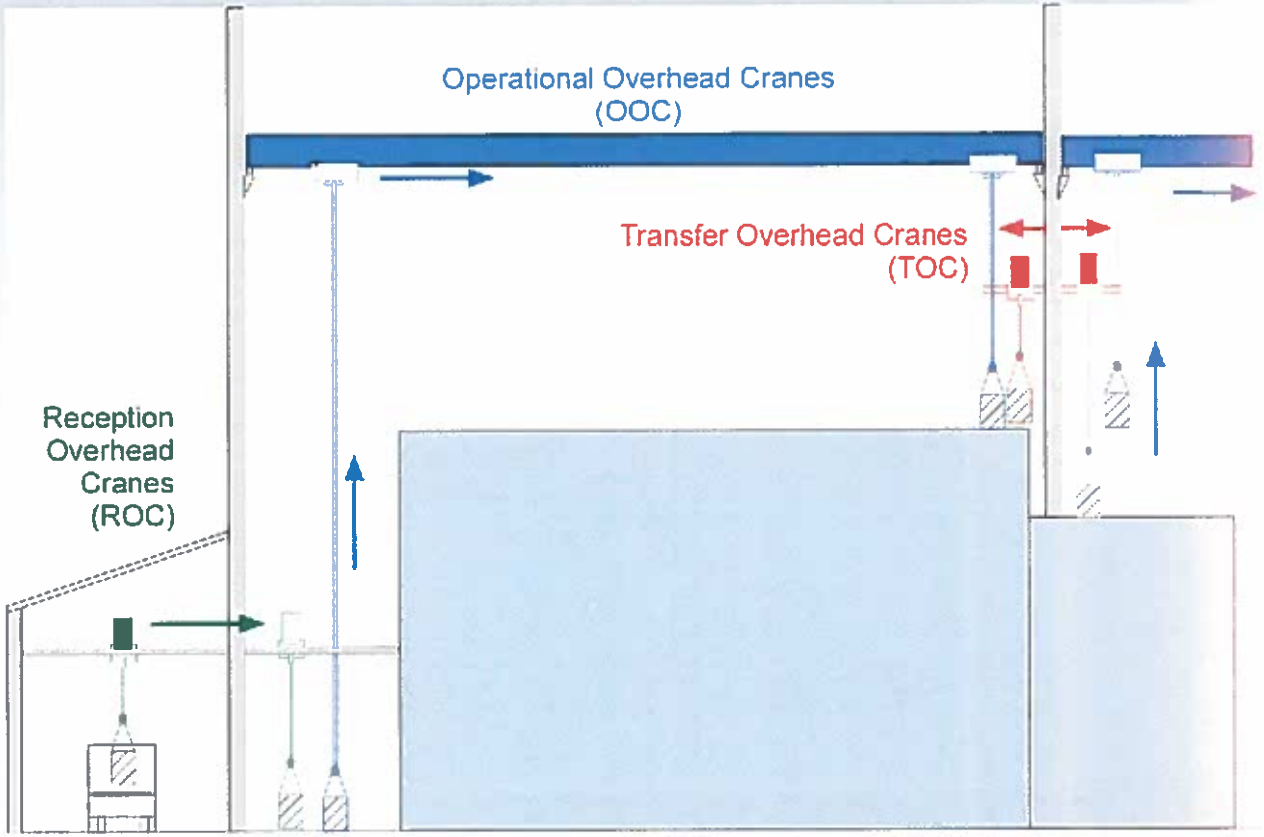
6. Project Execution Plan

Integrated Cover System



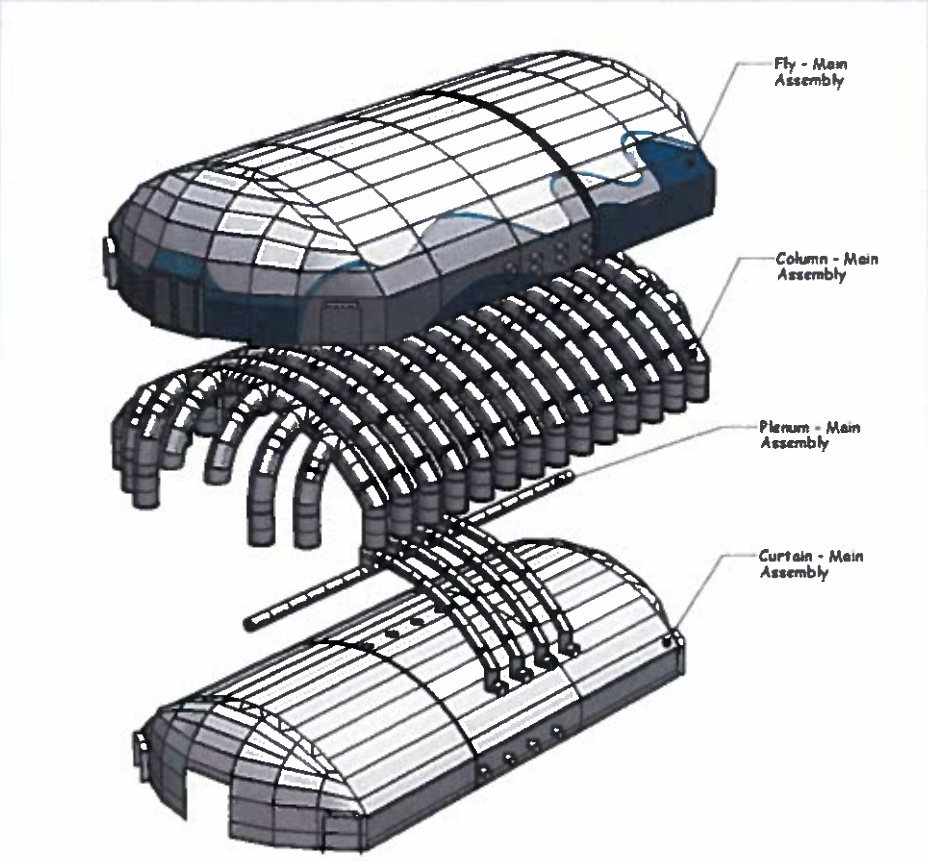
6. Project Execution Plan

Integrated Cover System



6. Project Execution Plan

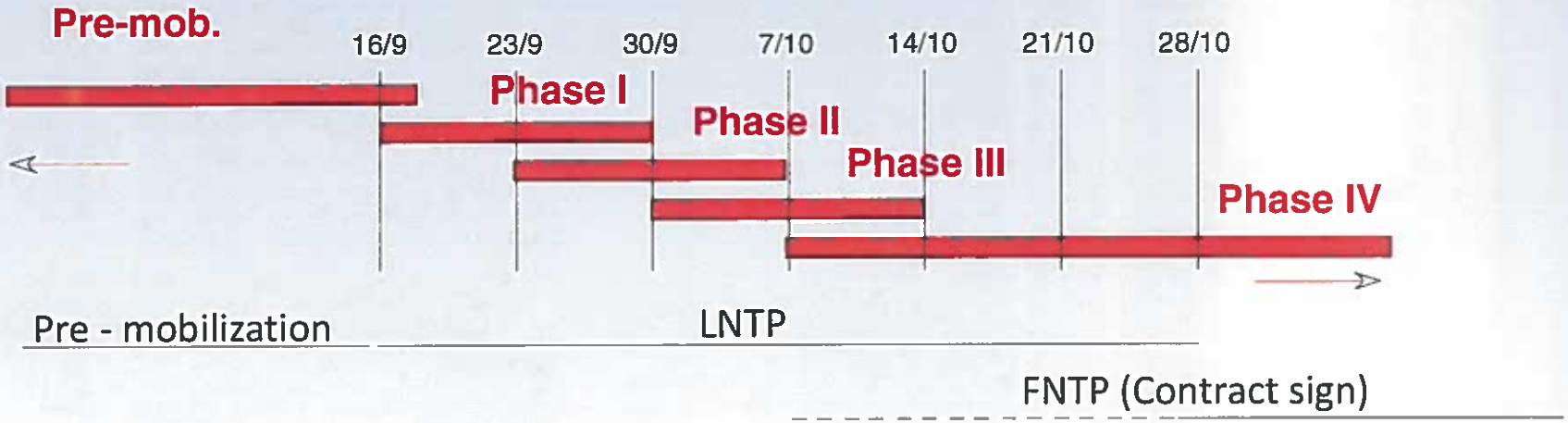
Temporary shelters



2 Mega Dome
(45m L x 90m L x 18m H)

4. LNTP – Mobilization Phase

LNTP sequence



4. LNTP – Mobilization Phase

Pre-mob: Actions in progress

- Material and equipment procurement
- Concrete suppliers negotiation
- Integrated Cover System (ICS) Detail Design
- ICS Supplier pre-selection
- Temporary winter shelters

4. LNTP – Mobilization Phase

Pre-mob: Actions in progress (continue)

- Engineering consultant selection
- Surveying, test and monitoring services selection
- Information technology and communication systems
- St. John's offices and guesthouses (pre-contracts)
- Goose Bay offices and guesthouses (pre-contracts)

4. LNTP – Mobilization Phase

Pre-mob: Actions in progress (continue)

- Working visa procedures for Astaldi personnel
- Surety and Bank final negotiations
- LC for the LNTP advanced payment
- Software and tools for contract communication (Aconex)
- Logistics and transportation for peoples and goods

4. LNTP – Mobilization Phase

Phase I - Actions from 16/9 to 29/09

- Kickoff meeting with the Company
- Detailed visit to Job Site
- Permits and rules of access to the working areas
- Meeting finalized to the working schedule analysis
- Meeting finalized to the ICS analysis

7. LNTP – Mobilization Phase

Phase I - Actions from 16/9 to 29/09 (continue)

- Office in Goose Bay for Innu relations and labour hiring
- Meeting with LCP for design/construction coordination
- Meeting with LCP for discussion of the LNTP procedures
- Access Road Maintenance
- Storages, training facilities &and accommodations in Goose Bay

7. LNTP – Mobilization Phase

Phase I - Actions from 16/9 to 29/09 (continue)

- Document transfer and communication procedures
- LNTP Working Permits
- Introduction meeting with the Unions
- Introduction meeting with the Innu and other communities
- LNTP QHSE procedures

7. LNTP – Mobilization Phase

Phase II - Actions from 22/9 to 06/10

- Procurement and delivery of the equipment for the site mobilization
- Procurement and delivery of the material for the site mobilization
- Labour recruitment for the LNTP
- Installation in the existing site facilities (camp, etc..)
- Detailed survey for site installation and mobilization

7. LNTP – Mobilization Phase

Phase III - Actions from 30/9 to 13/10

- Procurement and delivery of the equipment for the site mobilization *(continue)*
- Procurement and delivery of the material for the site mobilization *(continue)*
- Access Sand borrow pit and contractor laydown area installation
- Temporary shelter installation in the industrial area and in the laydown area
- Industrial water supply detailed design and procurement

7. LNTP – Mobilization Phase

Phase IV - Actions from 7/10 to 31/10

- Procurement Plan for the prosecution of the work
- Concrete platforms for site installations (containers, etc.)
- Electric power supply network construction (start-up)
- Water supply and drainage network contraction (start-up)
- Aggregate production testing and start-up

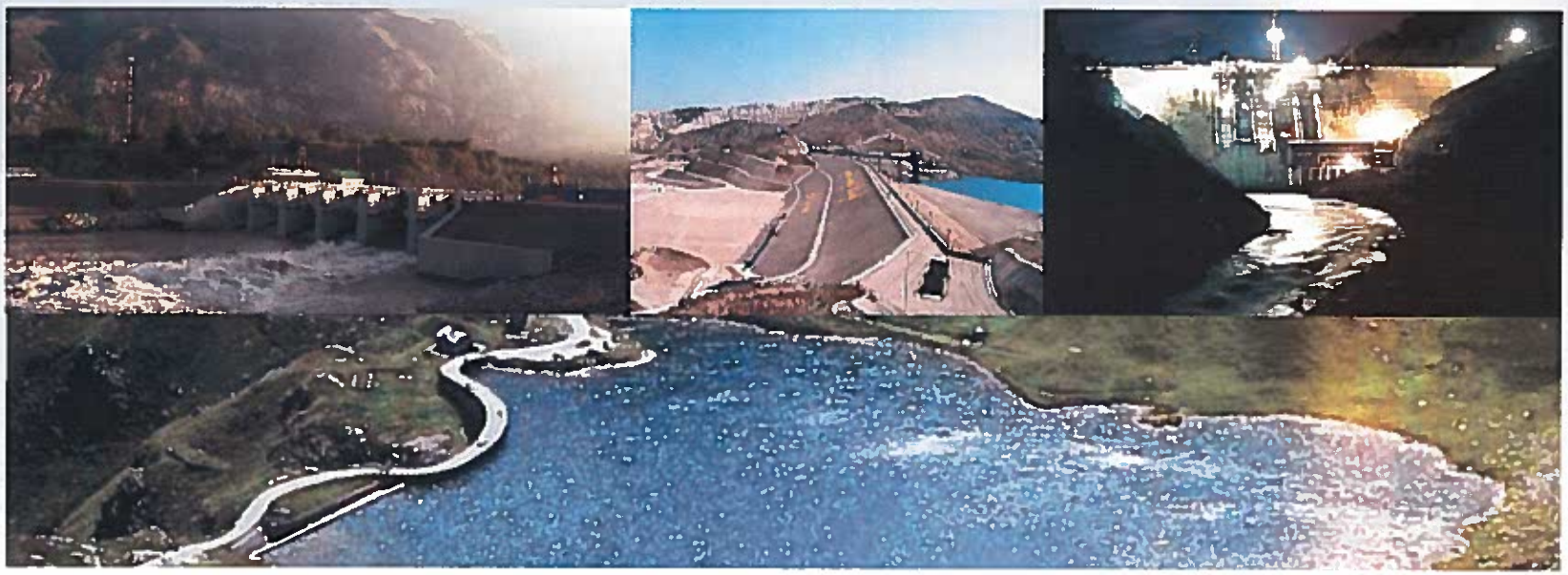
7. LNTP – Mobilization Phase

Other Actions of LNTP

- Project Presentation to communities
- Website and Social Media sites to increase hiring possibilities
- Presentation of the Project at the University and other technical institution
- Preliminary setup of the training facilities for formworks
- Submission of the detailed working schedule of the whole project with resources, equipment and materials

Muskrat Falls Generation

(Lower Churchill Project, Labrador, Canada)



Thanks for your attention

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ASTALDI CANADA Inc.