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Chiller Plant Design Improves Capacity; Saves Time Without New Development

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Agenda

Chiller Plant Design

- Austin Energy District Cooling Program
- Downtown District Cooling Program
- Project Drivers
- Challenges
- Solution for DCP4
- Design-Build Schedule
- Summary



District Cooling Program

Background

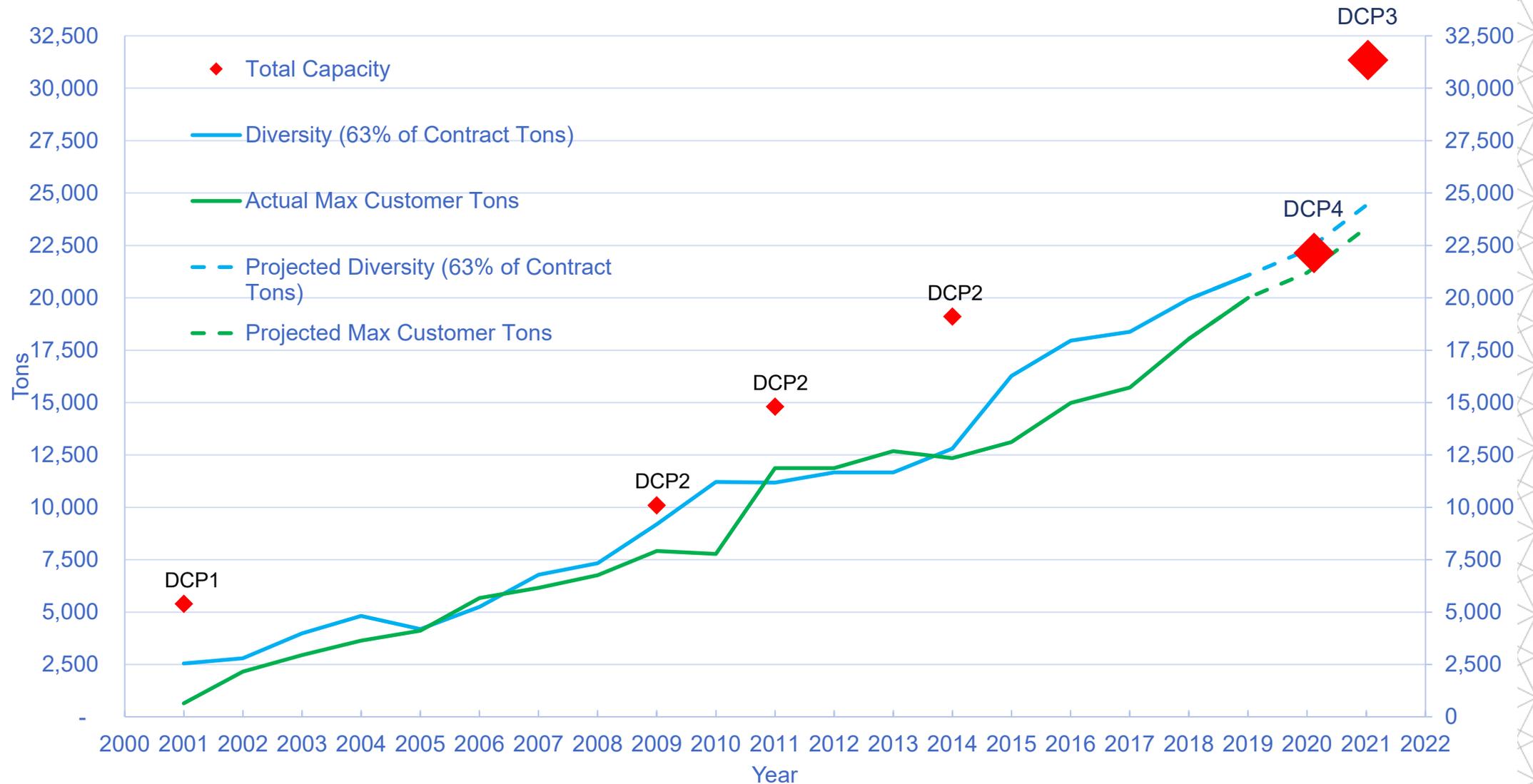
- Assets
 - 7 District Cooling Plants (3 in Construction)
 - 58,000 Tons
 - 130,000 Ton-hrs of Thermal Storage
- District Cooling Program has 70 Connected Customers
- Over 30 Million Square Feet of Facilities
- Summer of 2019 Provided 24MW Thermal Shift

District Cooling Program Plant Locations





Downtown District Cooling Growth Projections



Project Drivers

- Demand for Chilled Water
- Fast Track Solution
- Site Development
- Project Delivery

DCP4 | Development Phase

Best Alternative

- Modular Chilled Water Plant
- On Top of Austin Convention Center
- Design-Build Process



Multivista

DCP4 | Development Phase

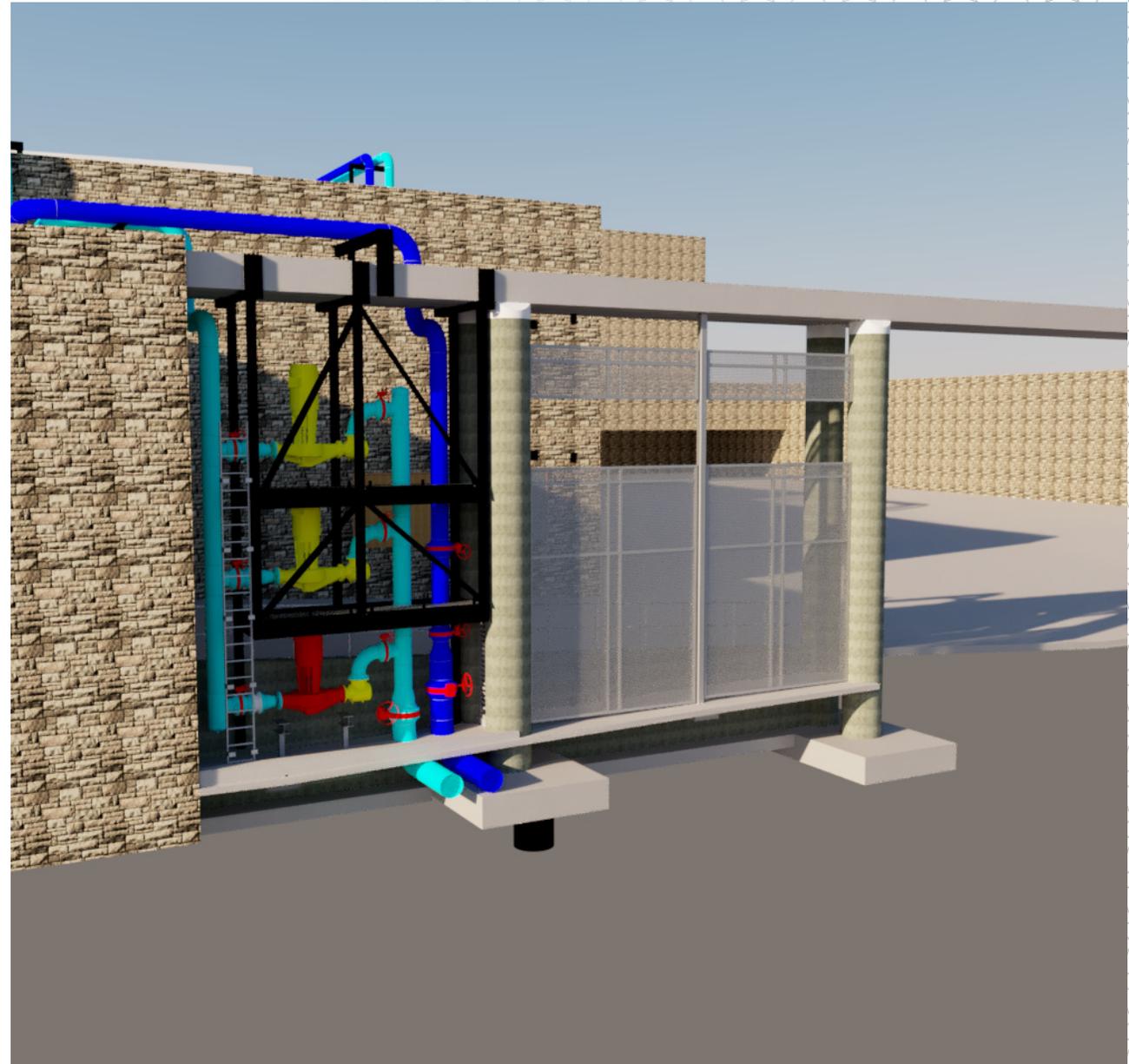
Challenges

- Validate Design Criteria Manual
- Mechanical – System Pressurization
- Electrical – Limitation of Existing Infrastructure
- Structural – Limitation of Existing Roof
- Noise – City Ordinance

DCP4 | Mechanical

Solution

- Relocate Chilled Water Pumps
- Pressure Sustaining Valve



DCP4 | Electrical

Solution

- Found a spare bus tap
- Two independent electrical feeds
- Separate the electrical distribution of DCP4 vs. ACC
- 4000 amp Bus Tap to DCP4



DCP4 | Structural

Solution

- Detailed Analytical Model to Determine Reserve Capacity in the Structure
- Columns of the Supporting Platforms to Only Load Existing Concrete Columns That Had Reserve Capacity
- Intricate Steel Framing Layout



DCP4 | Noise

Solution

- Isolation of Cooling Tower and Plant Equipment
- Increased Wall Thickness of Plant
- Acoustical Louvers Around Chilled Water Pumps
- Acoustical Louvers at Cooling Tower



DCP4

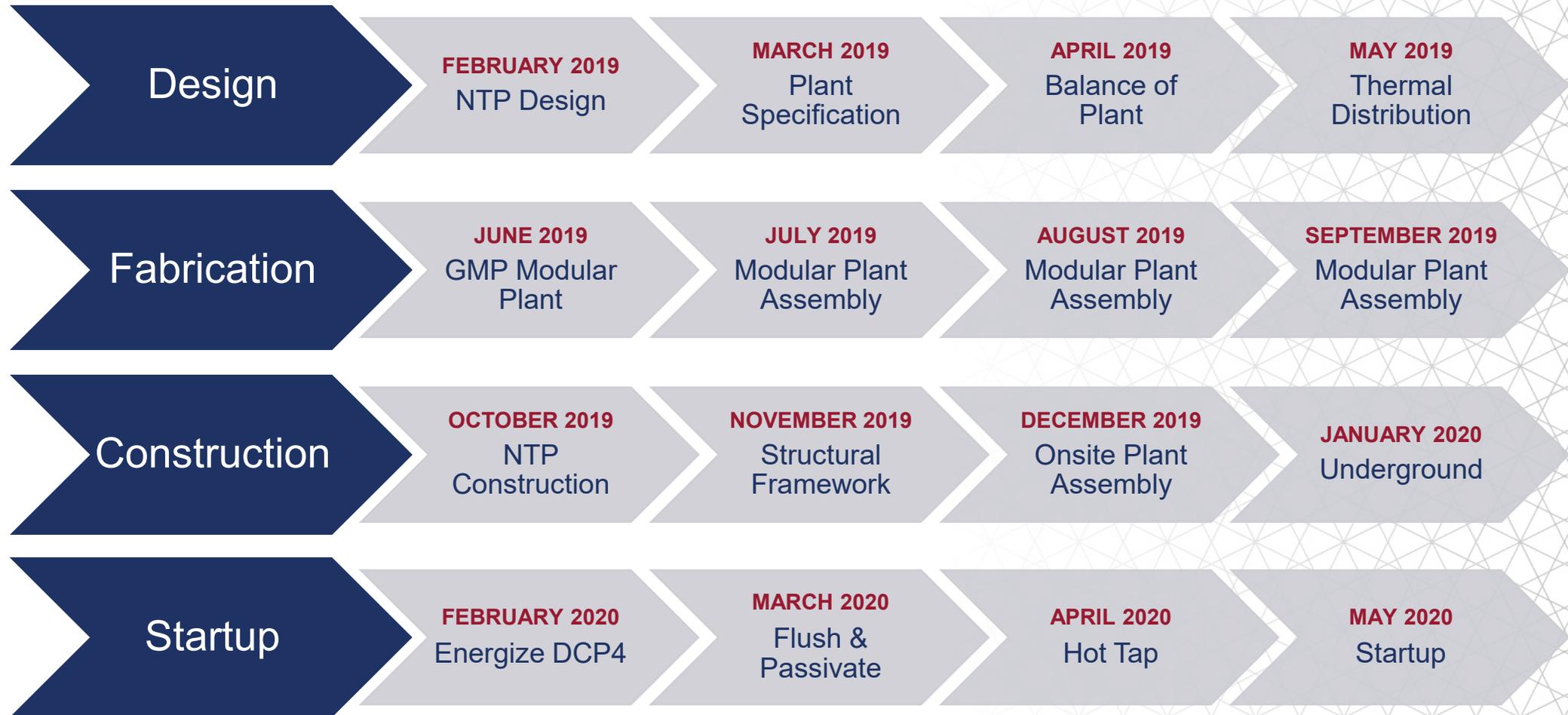
- 3,000 Tons of Cooling
- 3 x 1,000 Ton Trane Chillers
- 3 x Vertical In-line CHW Pumps
- 3 x HSC Condenser Water Pumps
- 4 x 1,000 Tons Cooling Tower Cells

DCP4 | Modular Chilled Water Plant

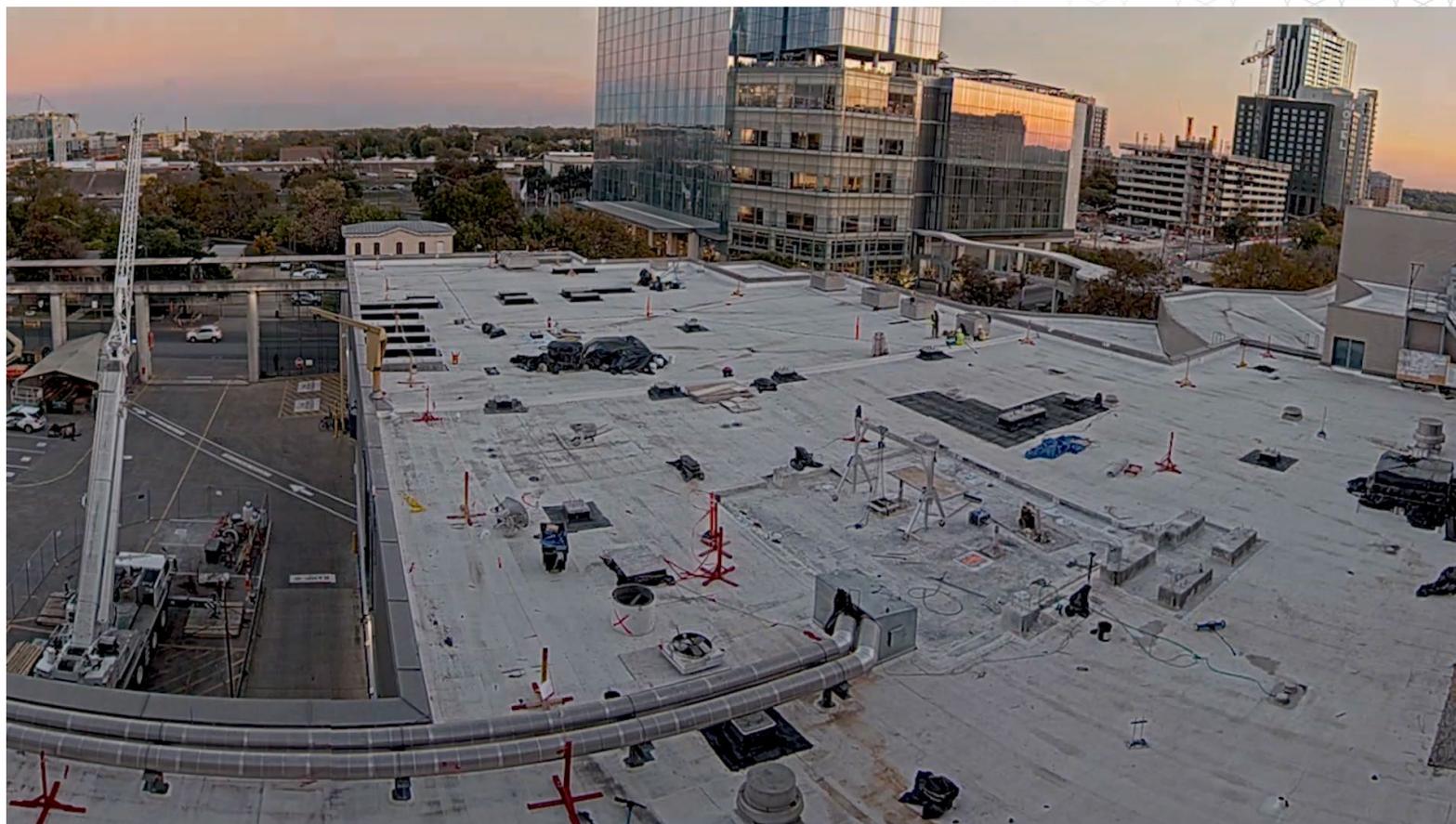
Benefits

- Reduced field labor
- Reliable factory quality control practices
- Repeatable factory processes
- Factory controls testing and commissioning
- Performance testing
- Guaranteed on-time delivery
- Fastest lead time from design to completion
- Built in parallel with other construction
- Single source responsibility

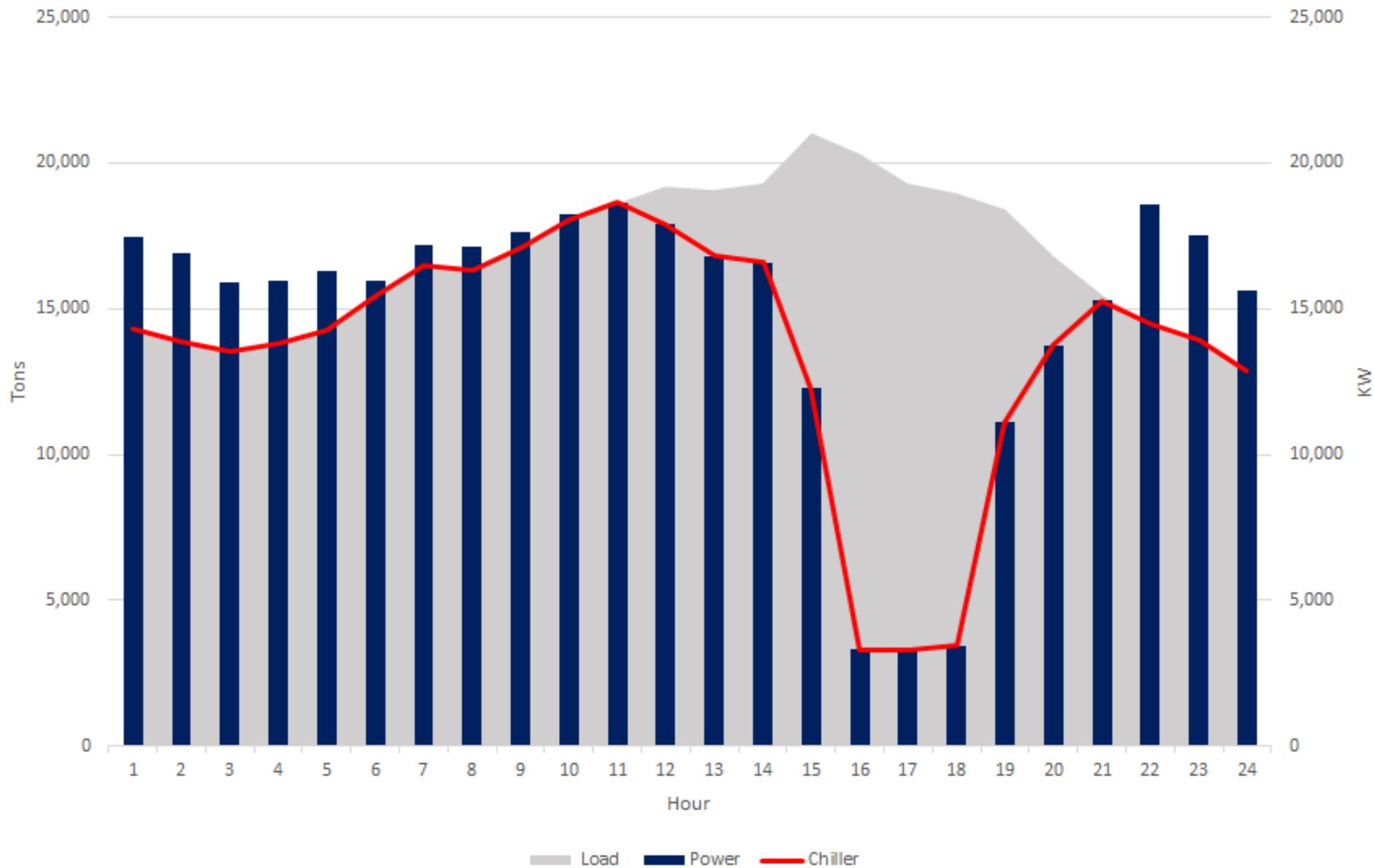
DCP 4 Timeline: 16 Months



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August 14, 2019



DCP4

Summary

- Mission Accomplished!
- DCP4 Will Be Operational by May 2020
- Thermal Shift toward Austin Energy's Resource, Generation and Climate Protection Goal of 30 MW of Thermal Energy Storage by 2027
- Future Plans



Questions?

Thank You for Your Time

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