

**UCCS** University of Colorado  
Colorado Springs

CS4950/5950  
*Homeland Security & Cybersecurity*

**ES-C2M2**

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**Lesson 20**  
**ES-C2M2**

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Springs



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**ES-C2M2**

- The **Electricity Subsector Cybersecurity Capability Maturity Model** was developed by Carnegie Mellon University in support of a White House initiative jointly overseen by the Department of Energy and Department of Homeland Security.
- The model was released in May 2012.



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**ES-C2M2**

Like the NIST Cybersecurity Framework, ES-C2M2 built upon existing **standards, guidelines, and best practices.**

ES-C2M2 Process

Domain # Maturity Level

Competence Tiers

Cybersecurity Practices

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**ES-C2M2**

- Similar to the NIST Cybersecurity Framework, ES-C2M2 is built upon a set of **Cybersecurity Practices organized into ten logical Domains.**
- Each Domain is comprised of a set of **measures an organization can perform to establish and mature their cybersecurity posture.**

Cyber System (before)

Cyber System (implement)

Cyber System (after)

Domain # Maturity Profile (before)

Domain # Maturity Profile (after)

ES-C2M2 Process


Competence Tiers

Cybersecurity Practices

Competence Tiers

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**ES-C2M2**

Unlike the NIST Cybersecurity Framework, which was developed to support all types of infrastructure, the **ES-C2M2 Cybersecurity Practices were specifically selected to apply to electric utilities**, regardless of ownership structure, size, or function.



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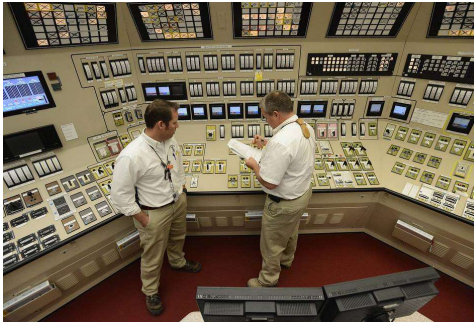
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**ES-C2M2**

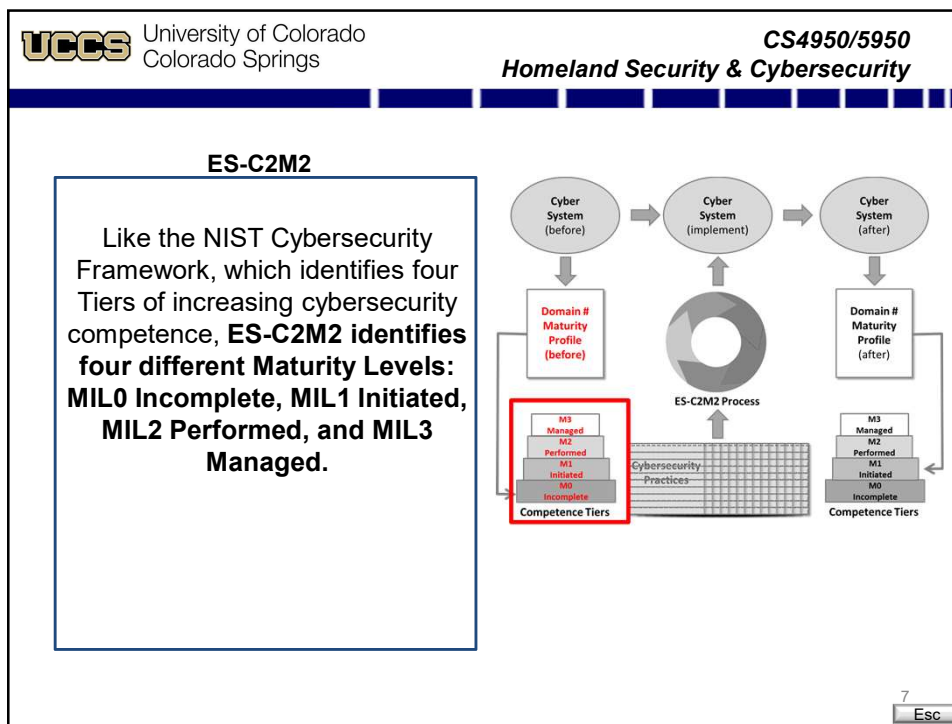
- ES-C2M2, however, does not necessarily apply to nuclear power plants.**
- Nuclear power plants have their own set of standards established by the Nuclear Regulatory Commission.



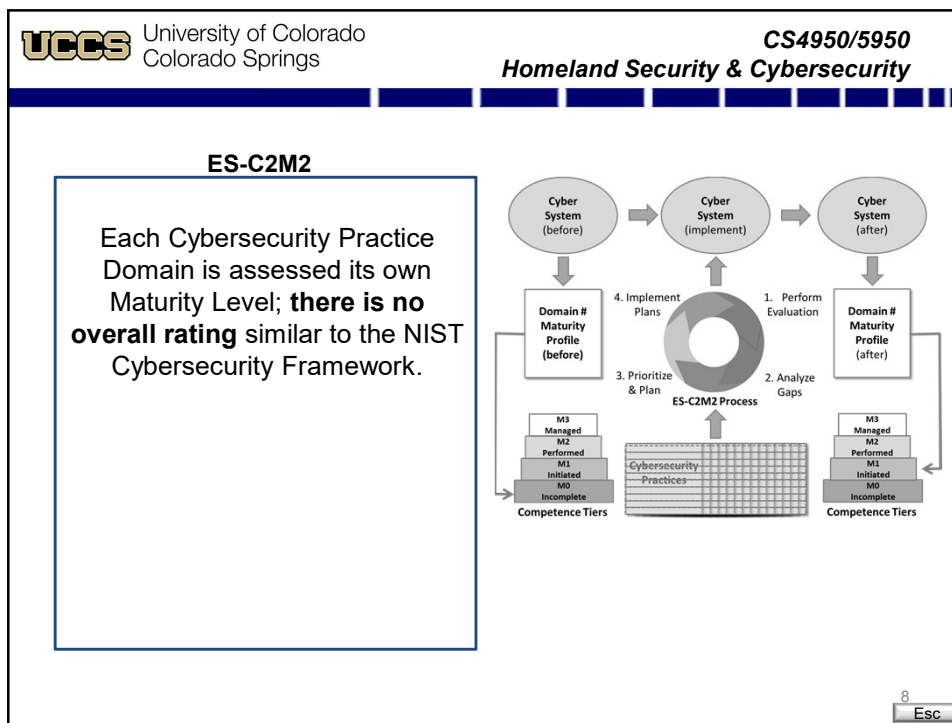


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### ES-C2M2

- However, ES-C2M2 has the advantage that the specific **measures within each Domain are already mapped to different Maturity Levels.**
- To earn the next in a given Domain, an organization **must perform all the practices in that level and its predecessor levels.**

The diagram illustrates the ES-C2M2 process. At the top, three ovals represent the 'Cyber System' state: 'before', 'implement', and 'after'. Below these, a circular process flow is shown with four steps: 1. Perform Evaluation, 2. Analyze Gaps, 3. Prioritize & Plan, and 4. Implement Plans. This cycle is labeled 'ES-C2M2 Process'. On the left and right sides, there are 'Domain # Maturity Profile' boxes, each showing a stack of four tiers: M3 Managed, M2 Performed, M1 Initiated, and M0 Incomplete. Arrows indicate the flow from 'before' to 'implement' to 'after' and from the maturity profiles into the process cycle. At the bottom, a grid labeled 'Cybersecurity Practices' is shown, with arrows pointing up to the process cycle.

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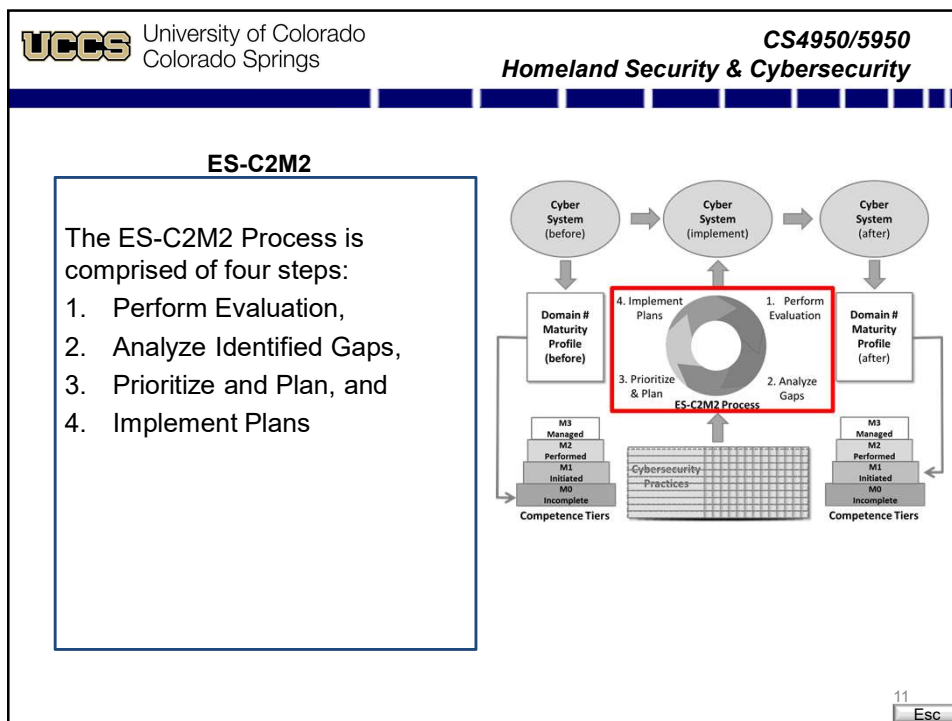
### ES-C2M2

- Like the NIST Cybersecurity Framework, **ES-C2M2 uses a continuous improvement program** to incrementally increase an organization's overall cybersecurity posture.
- ES-C2M2 was designed to evaluate cybersecurity capabilities consistently, communicate capabilities in meaningful terms, and guide an organization in prioritizing cybersecurity investments.

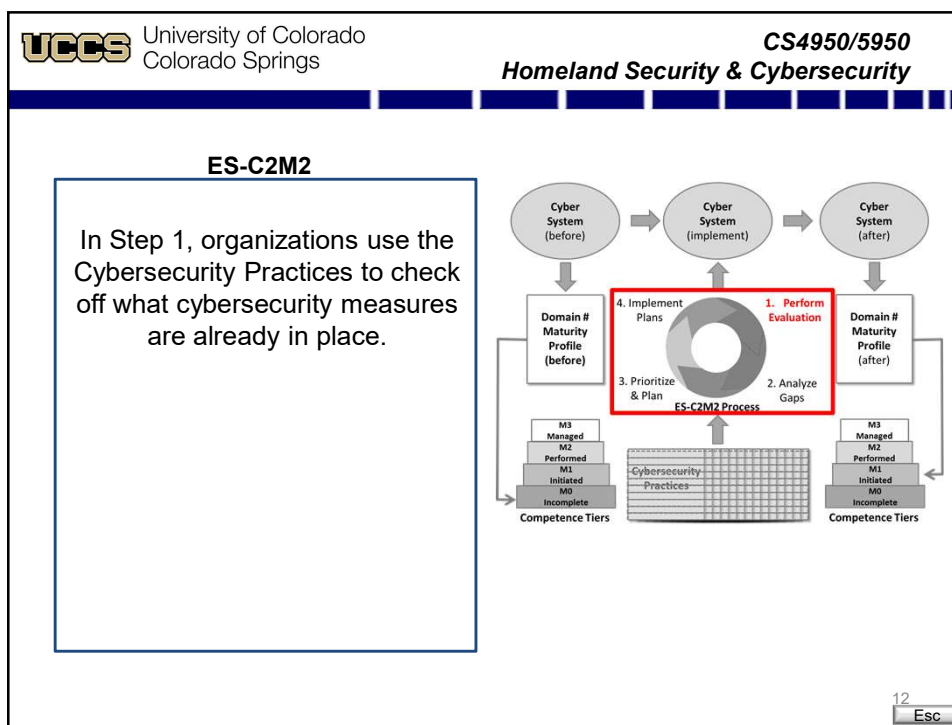
The diagram is identical to the one on slide 9, showing the ES-C2M2 process flow and maturity profiles. However, the 'ES-C2M2 Process' cycle is highlighted with a red rectangular border.

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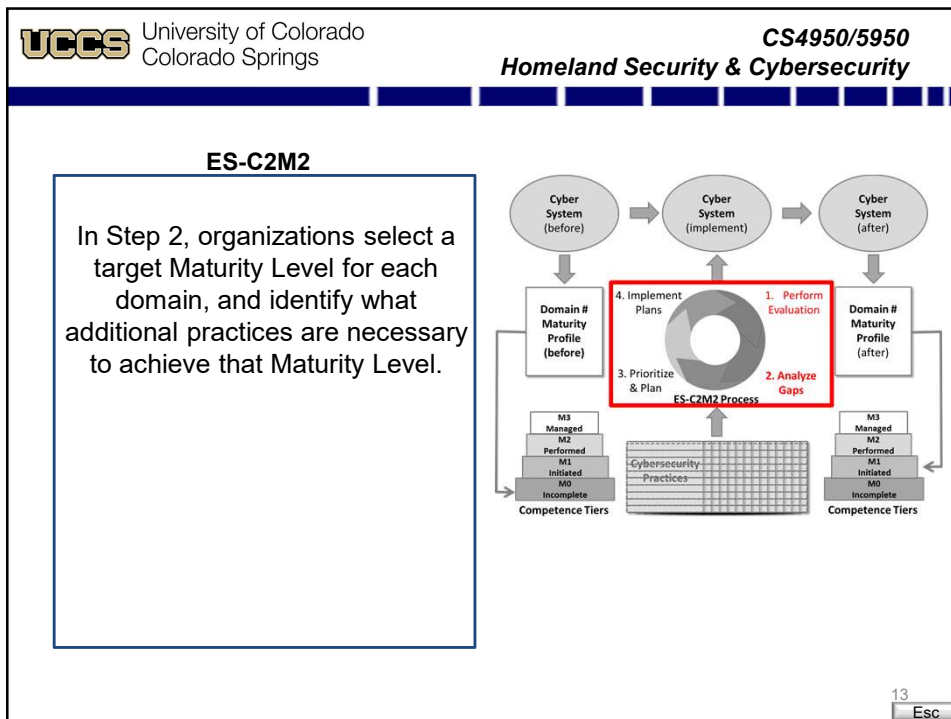
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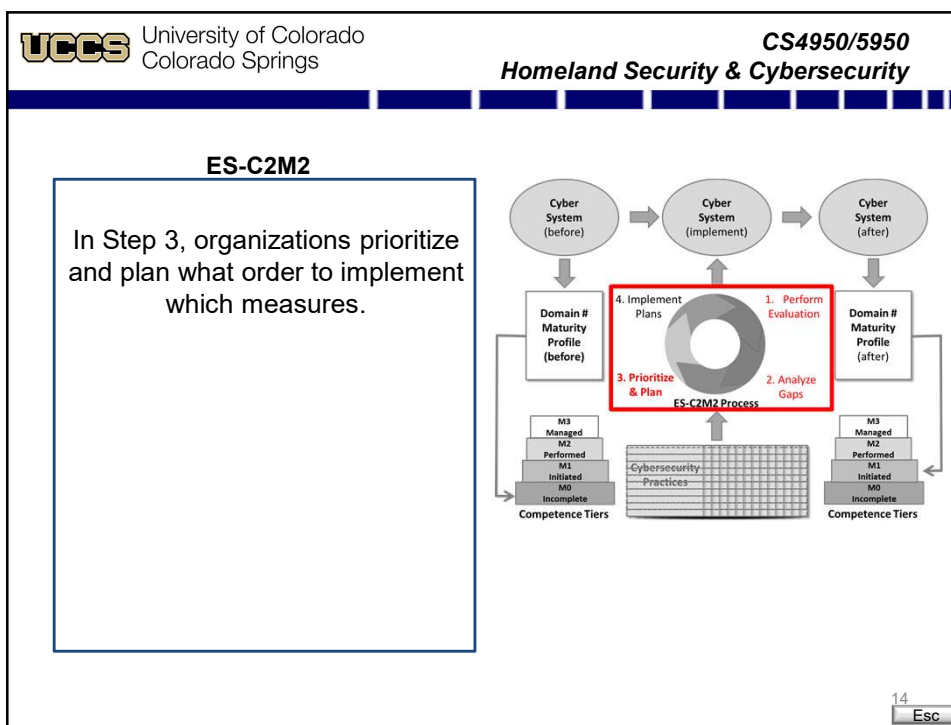
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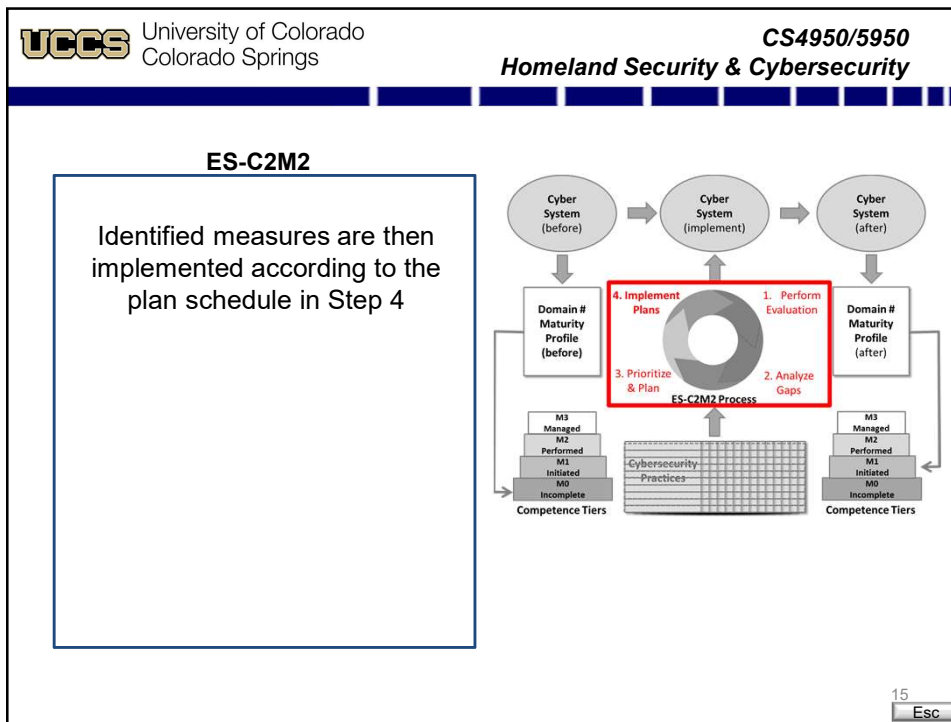


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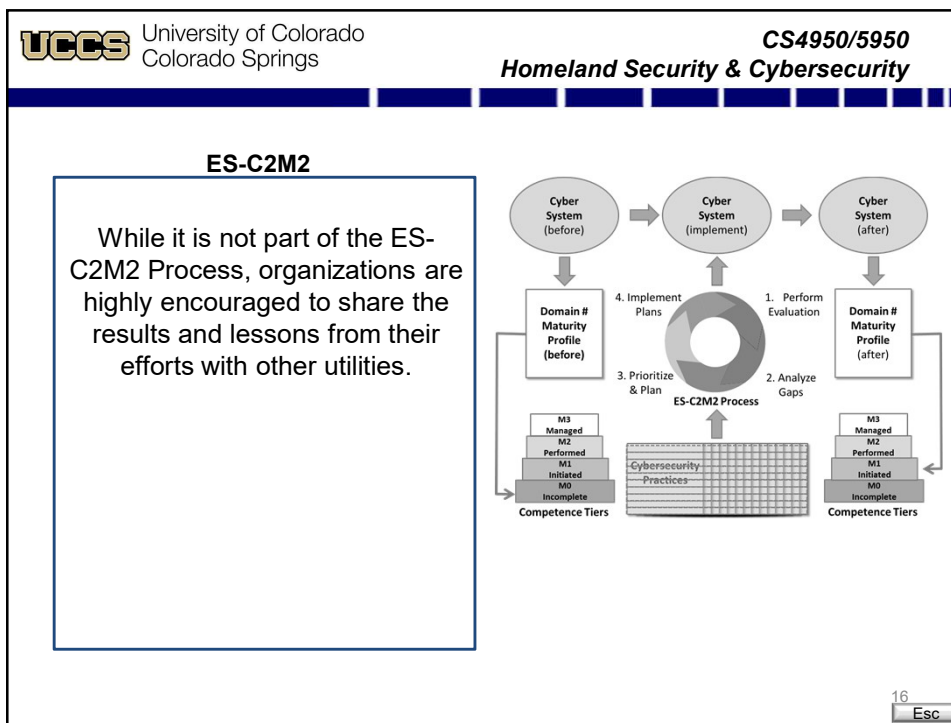


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**Conclusion**

Questions?



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