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Project Title:	2025 Energy Code Compliance Initiatives
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Document Title:	Title 24 Audits
Description:	Please see the attached proposal for improving Title 24 compliance. I would be happy to discuss this in more detail.
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Title 24 enforcement is a joke. Taylor Engineers peer reviews dozens of designs every year. Almost all of them include serious energy code violations. We often get copies of T24 energy models which do not come close to modeling the proposed design. To be fair, some of the issues are the bugs and severe limitations of the software, but the bigger issue is lack of interest and competence at the AHJ level for enforcement. The ever-increasing amount of paperwork the CEC requires is not the solution. Owners and designers are not penalized for not meeting Title 24. Consequently, few designers even bother to fully learn the code, let alone comply. Note that the problem is the same whether California stays with Title 24 or switches to ASHRAE 90.1.

The best way to improve T24 compliance is for the state legislature to authorize the CEC to audit a small, random sample of building permits and to penalize submissions that do not meet Title 24. Penalties could include:

- Delaying the permit until the design is revised to the satisfaction of the auditors
- Fines
- Publishing audit results on a website (Fear of embarrassment is a powerful motivator)

Right now, no one is afraid of Title 24. Americans know that the IRS could audit their tax return, and this goes a long way towards keeping most of us honest. Few people know that the IRS only audits 0.3% of tax returns. Auditing a similar fraction of T24 permits would install an appropriate amount of fear in most designers and contractors and dramatically improve compliance across the board.

The Title 24 Permit Review Office (T24 PROs) could start very small, maybe a couple highly experienced, design/modeling experts. The PROs could model and track their cumulative energy savings to help justify the expense. They could also propose streamlining or eliminating T24 paperwork to reduce the cost of construction statewide.

Over time, as the T24 PROs prove their effectiveness, their staff could increase and the burden on AHJs and designers could be reduced to the point where local AHJs are no longer responsible for Title 24 and Title 24 paperwork is eliminated. Fear of a failed audit will be enough.

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Title 24 Proposal: Centralized Energy Code Compliance Reviews

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Problem: There is a significant performance gap between Title 24 and actual buildings. This gap impedes the building industry's ability to help meet California's statutory requirements to reduce greenhouse gas emissions.

- The energy code is continually changing and increasingly complicated. It is difficult for designers and other key industry stakeholders to keep up with Title 24 requirements.
- Many mandatory and prescriptive requirements are not met in permitted designs and constructed building.
- Taylor Engineers peer reviews dozens of designs every year. Almost all of them include serious energy code violations; many of which are for requirements that have been in the code for many update cycles. Common code violations include:
 - Failure to implement Isolation Areas (120.2(g))
 - Single Max VAV logic instead of Dual Max (140.4(d)2)
 - Fixed duct static pressure setpoint instead of setpoint reset (140.4(c)2.B)
 - Supply air temperature setpoint reset by outside air temperature rather than zone demand (140.4(f))
 - Failure to use available transfer air for kitchen or lab exhaust makeup (140.4(o))
 - CBECC-Com models that bear little resemblance to the actual design
- The authorities having jurisdiction (AHJs) for Title 24 do not catch compliance issues.
 - From our experience, AHJ enforcement generally only confirms that Title 24 forms are on the drawings. There is little or no confirmation that the content in forms accurately represents the building or that the building meets code. Permits may be denied for not having the forms but rarely for real Title 24 violations.
 - The performance approach via CBECC-Com is flawed. The software is limited in capability and allows for simulations with excessive unmet loads to comply. Professional modelers routinely make egregious designs comply either by modeling something that does not accurately represent the design or by circumventing software limitations to generate a "Complies" result.
 - It takes training, expertise, and motivation to enforce Title 24. That is asking too much of building inspectors who cannot be experts in everything and whose focus is generally on safety issues.
- The Compliance Forms that are intended to improve compliance and verification are impractical or ambiguous in many cases, easy to simply fake, and subject to the same lack of review by AHJs as with permit applications. For example, one of the forms requires visual inspection of duct connections and seals for essentially an entire duct system, much of which may not be accessible.
- Continued improvements to Title 24 will have limited real impact on actual building performance given the current industry situation.

Proposed Solution: Centralized Title 24 permit reviews

- A dedicated organization that reviews building permit applications for Title 24 compliance on behalf of AHJs, and sponsored by the CEC, CPUC, or IOUs. Staffed by trained and motivated experts. The organization would operate similar to how GBCI provides centralized review of LEED project certification.
- Centralizing the review process to a small group of trained experts would improve review quality, consistency, and thoroughness.
- AHJs would outsource the energy reviews, sending permit applications out to the centralized office, but would maintain legal authority. This would eliminate the need to train AHJs and the reliance on their reviews for Title 24 enforcement, allowing them to focus on other non-energy compliance issues.
- Some of the benefits with this approach:
 - Improve Title 24 compliance.
 - Centralizing reviews would help better understand which requirements are most frequently not met.
 - Better understanding of common issues would allow for focusing future reviews and reviewer training.
 - Better understanding of common issues would help prioritize topics for industry education and outreach.
 - Reduce the paperwork burden of acceptance forms. The trained reviewers would comb through actual plans, specifications, and energy models to verify true compliance, rather than simply checking off that forms were submitted.