

## Fwd: Request for Comments: Input on Potential Use of Insects for Control of Spotted Knapweed in Michigan

1 message

Hayes Trustee2 <trustee2hayestownshipmi@gmail.com>  
To: Clerk Hayes Township <clerk@hayestownshipmi.gov>

Mon, Apr 20, 2026 at 12:19 PM

Sent from my iPhone

Begin forwarded message:


**From:** Bill Conklin <supervisorhayestownshipmi@gmail.com>  
**Date:** February 3, 2026 at 4:24:46 PM EST  
**To:** Doug Kuebler <hayestrustee5@gmail.com>, Matthew Cunningham <trustee2@hayestownshipmi.gov>, Julie Collard <treasurer@hayestownshipmi.gov>, Kristin Baranski Clerk <clerk@hayestownshipmi.gov>  
**Subject:** Fwd: Request for Comments: Input on Potential Use of Insects for Control of Spotted Knapweed in Michigan

FYI..... I thought Doug might have some insight into such ---

----- Forwarded message -----

**From:** Michigan Dept of Agriculture & Rural Development <MDARD@govsubscriptions.michigan.gov>  
**Date:** Tue, Feb 3, 2026 at 2:32 PM  
**Subject:** Request for Comments: Input on Potential Use of Insects for Control of Spotted Knapweed in Michigan  
**To:** <supervisor@hayestownshipmi.gov>

Having trouble viewing this email? [View it as a Web page.](#)

 SHARE

## Request for Comments: Input on Potential Use of Insects for Control of Spotted Knapweed in Michigan

The Michigan Department of Agriculture and Rural Development (MDARD) is requesting comments on permitting the release of two species of insect that are scientifically proven to help prevent the spread of spotted knapweed (*Centaurea stoebe micranthos*, also known as star thistle), an invasive weed. These insects - seedhead weevil (*Larinus minutus*) and root boring weevil (*Cyphocleonus achates*) - feed exclusively on spotted knapweed and die off after that plant is removed from the landscape. Input will help ensure any future decisions regarding the use of these insects balances needs of interested parties, ecological considerations, and scientific understanding.

Stakeholders can [provide comments through an online survey](#). All comments must be submitted by 11:59 pm EST on Friday, March 6, 2026.

### Regulatory Authority:

Michigan's Insect Pest and Plant Diseases Act (Act 189 of 1931) requires a permit for any living insects shipped into or within Michigan. MDARD typically accepts federal PPQ 526 permits in fulfillment of this requirement. However, the federal government has determined that the insects considered in this proposal are low-risk, and it therefore no longer requires PPQ 526 permits to move said insects across state lines.

MDARD is therefore seeking public comment to consider all perspectives on whether and how to issue a state-level permit under Act 189 of 1931 to enable the importation into Michigan of certain species of weevil for spotted knapweed

control.

## Background:

Spotted knapweed (also known as star thistle) was introduced into the United States in 1890s through commercial seed imports from Eurasia. It is often found in heavily disturbed sites, such as roadsides, gravel pits, and agricultural field margins, but it also can be present in undisturbed dunes, dry prairies, oak and pine woodlands and rangeland. Knapweed can produce as many as 1,000 seeds per plant, which can be dispersed via wind by up to 5,000 seeds per square foot. The seeds can remain viable for up to eight years.

## Positive Environmental Impacts of Spotted Knapweed:

Native pollinators have been observed feeding on spotted knapweed, and beekeepers rely on it as a crucial late-season nectar source, particularly in areas where other plants have stopped blooming. Removal or widespread control of spotted knapweed therefore may have a negative effect on already declining populations of native pollinators as well as the beekeeping industry.

## Negative Environmental Impacts of Spotted Knapweed:

Spotted knapweed's ability to out-compete native plants poses a significant threat to conservation efforts due to its highly invasive nature and multitude of negative ecological impacts:

- Displacement of native plants and reduced biodiversity: Spotted knapweed outcompetes native plants for resources. It produces chemicals that inhibit the growth and germination of surrounding plants, giving it a further competitive advantage and allowing it to form dense stands, effectively crowding out native vegetation and reducing overall plant diversity. This loss of native plant diversity adversely affects wildlife that rely on those native plants for food and shelter.<sup>[1],[2],[3],[4]</sup>
- Impacts on grazing resources: Wildlife and most livestock find spotted knapweed unpalatable, further limiting available food sources in infested areas.<sup>10,11</sup>
- Degradation of soil and water resources: By displacing native grasses, spotted knapweed contributes to increased soil erosion, surface runoff, and stream sedimentation. Increased sedimentation can harm streams and aquatic organisms. Studies suggest that spotted knapweed can alter the composition and overall health of the soil, potentially impacting long-term ecosystem function.<sup>9</sup>
- Hindrance to restoration efforts: Spotted knapweed's ability to produce thousands of seeds that remain viable in the soil for years makes it difficult to eradicate. While various control methods exist (manual removal, herbicides, biological control), effectiveness is limited, and consistent, long-term management is often required.<sup>[5],[6],[7],[8]</sup>

## Management Approaches:

The most effective control strategy for large infestations of spotted knapweed is an integrated approach using biological control insects, mechanical removal (hand-pulling or grazing), and herbicides. Biological control insects are used in many states to control large stands of spotted knapweed.<sup>[9],[10],[11]</sup> The most effective insects are a combination of seedhead (*Larinus minutus*) and root-boring (*Cyphocleonus achates*) weevils. These insects have been approved for release by U.S. Department of Agriculture (USDA) and only survive as long as knapweed is present. According to the USDA, the biological control insects selected for spotted knapweed have evolved to feed exclusively on the plant, posing no threat to other native plants or crops.

Mechanical and fire-based control methods, such as mowing and prescribed burning, have shown limited or inconsistent effectiveness in controlling spotted knapweed.<sup>[12],[13],[14]</sup> Mowing alone does not kill the plant and may even stimulate regrowth or flowering if not timed precisely.<sup>[15],[16]</sup>

## Current Status of Biological Control Insects in Michigan

The seedhead weevil (*Larinus minutus*) is already widespread in Michigan, and permits have been approved for this species to be released in Michigan in the past.

The root boring weevil (*Cyphocleonus achates*), however, has not been shown to be widely distributed in Michigan, and permits have not been approved for release in Michigan other than for research in very limited areas. Data shows that the combination of both types of weevils provide the best spotted knapweed control.<sup>2,7,[17]</sup>

Requests for permits for both species are commonly brought to MDARD. While permits for the seedhead weevil have been approved in the past, MDARD is now seeking public input to ensure that any future decisions regarding their use continue to reflect current stakeholder needs, scientific understanding, and ecological considerations.

## Proposal:

MDARD is considering four approaches for permit approval:

1. **Blanket Approval:** Permits would be granted for the release of both biological control insects across all affected areas. This approach supports broader, more consistent management of spotted knapweed and may reduce administrative burden. However, it offers less flexibility to address site-specific concerns and assumes that current understanding and past stakeholder input are sufficient to guide implementation.
2. **Conditional Approval:** Permits would be approved on a case-by-case basis, with specific conditions tailored to each location to ensure the safety and effectiveness of any release of either of these biological control insects. This approach allows for a potential compromise, but it will require ongoing input and feedback from stakeholders via formation of work group.
3. **Research-Only Use:** Permits would be limited to controlled research settings or pilot projects in select locations. This approach allows for continued study of the insects' effectiveness and ecological impact in Michigan without broader release. It prioritizes caution and data collection but may delay widespread management benefits.
4. **No Approval:** No permits would be issued for the release of either biological control insect at this time. This approach eliminates the risk of unintended ecological consequences but may limit available tools for managing spotted knapweed and could place greater reliance on chemical or mechanical control methods.

**We Invite Your Comments:** We encourage all community members, stakeholders, and experts to provide their comments, concerns, and suggestions regarding this proposal. Please complete MDARD's [online survey](#) by 11:59 pm EST on Friday, March 6, 2026.

---

[1] University of Alaska Anchorage. (n.d.). *Spotted knapweed (Centaurea stoebe ssp. micranthos)*. Alaska Center for Conservation Science. Retrieved from [https://accs.uaa.alaska.edu/wp-content/uploads/Centaurea\\_stoebe\\_BIO\\_CEST8.pdf](https://accs.uaa.alaska.edu/wp-content/uploads/Centaurea_stoebe_BIO_CEST8.pdf)

[2] National Invasive Species Information Center. (n.d.). *Spotted Knapweed*. U.S. Department of Agriculture. Retrieved from <https://www.invasivespeciesinfo.gov/terrestrial/plants/spotted-knapweed>

[3] Virginia Tech Forest Resources and Environmental Conservation. (2021). *Spotted Knapweed (Centaurea stoebe ssp. micranthos)*. Retrieved from [https://forestupdate.frec.vt.edu/content/dam/forestupdate\\_frec\\_vt\\_edu/newsletter/archives/2021/GagnonKnapweed.pdf](https://forestupdate.frec.vt.edu/content/dam/forestupdate_frec_vt_edu/newsletter/archives/2021/GagnonKnapweed.pdf)

[4] Arizona Invasive Plants. (n.d.). *Spotted Knapweed*. University of Arizona. Retrieved from <https://azinvasiveplants.arizona.edu/invasive-plant/spotted-knapweed>

[5] Jacobs, J.S., & Sheley, R.L. (1998). *Observation: Life history of spotted knapweed*. *Journal of Range Management*, 51(6), 665–673. Retrieved from <https://journals.uair.arizona.edu/index.php/jrm/article/download/9373/8985>

[6] University of Nevada Extension. (n.d.). *Managing Spotted Knapweed*. Retrieved from <https://extension.unr.edu/publication.aspx?PubID=2390>

[7] Oregon State University Extension. (n.d.). *Invasive Weeds in Forest Land: Knapweeds*. Retrieved from <https://extension.oregonstate.edu/sites/extd8/files/documents/ec1596.pdf>

[8] Sbatella, G., & Twelker, S. (n.d.). *Spotted knapweed control with herbicides containing aminocyclopyrachlor*. Oregon State University. Retrieved from [https://agsci.oregonstate.edu/sites/agscid7/files/coarec/attachments/spotted\\_knapweed\\_control\\_with\\_herbicides\\_containing\\_aminocyclopyrachlor.pdf](https://agsci.oregonstate.edu/sites/agscid7/files/coarec/attachments/spotted_knapweed_control_with_herbicides_containing_aminocyclopyrachlor.pdf)

[9] USDA APHIS. (1994). *Biological Control of Spotted and Diffuse Knapweeds*. Program Aid Number 1529. Retrieved from <https://www.invasive.org/publications/aphis/knapwpub.pdf>

[10] Minnesota Department of Agriculture. *Spotted Knapweed Biocontrol*. Retrieved from <https://www.mda.state.mn.us/plants/pestmanagement/weedcontrol/noxiouslist/spottedknapweed/knapweed>

[11] Colorado Department of Agriculture. *Diffuse and Spotted Knapweed Biocontrol*. Retrieved from <https://ag.colorado.gov/conservation/biocontrol/diffuse-spotted-knapweed>

[12] MacDonald, N. W., Scull, B. T., & Abella, S. R. (2007). *Mid-spring burning reduces spotted knapweed and increases native grasses during a Michigan experimental grassland establishment*. *Restoration Ecology*, 15(1), 118–128. Retrieved from [http://lakestatesfiresci.net/docs/LSFSC%20Research%20Brief%202014-7%20Knapweed&Fire\\_MacDonald\\_12052014FINAL.pdf](http://lakestatesfiresci.net/docs/LSFSC%20Research%20Brief%202014-7%20Knapweed&Fire_MacDonald_12052014FINAL.pdf)

[13] U.S. Forest Service. *Fire Effects Information System: Centaurea stoebe subsp. micranthos*. Retrieved from <https://www.fs.usda.gov/database/feis/plants/forb/censtom/all.pdf>

[14] Wisconsin Extension. (2025). *Spotted Knapweed Management Guide*. Retrieved from <https://renzweeds.cals.wisc.edu/wp-content/uploads/sites/177/2025/08/A3924-13.pdf>

[15] Missouri Department of Conservation. *Spotted Knapweed Control*. Retrieved from <https://mdc.mo.gov/trees-plants/invasive-plants/spotted-knapweed-control>

[16] Washington State Noxious Weed Control Board. *Control Options for Knapweeds*. Retrieved from [https://www.nwcb.wa.gov/pdfs/Knapweed-Control\\_Whatcom.pdf](https://www.nwcb.wa.gov/pdfs/Knapweed-Control_Whatcom.pdf)

[17] Knochel, D. G., et al. (2014). *The lesser of two weevils: physiological responses of spotted knapweed to above- and belowground herbivory by Larinus minutus and Cyphocleonus achates*. *Biocontrol Science and Technology*. Retrieved from ResearchGate.



STAY CONNECTED:



Get personalized voter information on early voting and other topics. [Michigan.gov/Vote](https://Michigan.gov/Vote)

SUBSCRIBER SERVICES:  
[Update Subscriptions](#) | [Help](#)

To ensure delivery of our emails to your inbox, please add [MDARD@govsubscriptions.michigan.gov](mailto:MDARD@govsubscriptions.michigan.gov) to your address book. If you were forwarded this email and would like to join our email list, [subscribe here](#). Please do not reply to this email as this address is not monitored for responses. Having trouble viewing this email? [View it as a Web page](#).

---

This email was sent to [supervisor@hayestownshipmi.gov](mailto:supervisor@hayestownshipmi.gov) using GovDelivery Communications Cloud on behalf of: Michigan Dept of Agriculture & Rural Development · P.O. Box 30017 · Lansing, MI 48909 · 1-800-292-3939

<Sam.F.Moore@gmail.com>, Sara Gay Dammann <sgdamm2002@gmail.com>, Scott Boal <smbdenver@gmail.com>, Stu Boal <sb@pistontech.com>, Susan Rankin <achalihall@yahoo.com>, William Borus <wborus@gmail.com>, Nancy Cunningham <cunninghamnancy231@gmail.com>, Nancy Ann Hellman <gahnah2012@gmail.com>, Barbara Perreault <beperrault@yahoo.com>, Roberta Svatora <asvat@sbcglobal.net>, Sharon Bryant <sharonbryantrn@yahoo.com>, Kay Cartford <kbcartford@hotmail.com>, Maggie Jensen <maggie.north@hotmail.com>, Arlene Bacot <harpey51@yahoo.com>, Cynthia Robson <geoclr@charter.net>, Kari Snedden <KariSnedden@gmail.com>, Aleta Runey <aletamr1964@gmail.com>, Joanne Durham <joannedurham@sbcglobal.net>, Paula Herzog <paula8well@yahoo.com>, Kathleen Runey <runeyka@gmail.com>, Amanda Sola <amandasola@gmail.com>, Susan Bowman <spearl46@sbcglobal.net>, denise st.onge <denisest.onge@icloud.com>, Scott Shawn <swyzlic@gmail.com>, Perreault, Barbara <Beperrault@yahoo.com>, Billiard, Anne <acbilliard@gmail.com>, Donald Gregory <dlgregoryii@gmail.com>, Nancy Cunningham <dncunningham3738@att.net>, Joan Holac <mjwh42@yahoo.com>, John Holec <jhohox25@yahoo.com>, shawn Hunt <sbernier1964@gmail.com>, Chris K <ck@americanchillers.com>, Janet E Merchant <janetmerchant@gmail.com>, <recoveringtomb@aol.com>, George Robson <robsong@charter.net>, Jesse Sola <jessesola@gmail.com>, Ron Svatora <rsvat@yahoo.com>, Kendal Taylor <kendal.j.taylor@gmail.com>, Jessica Mulvaney <jessicamulvaney924@gmail.com>, Barb Rn <barbrn07@charter.net>, JOLANTA LOTT <jazlott@sbcglobal.net>, <cranj817@yahoo.com>, Doug Waldo <waldodrw@yahoo.com>, Michelle Carey-Dave <environmichelle1@gmail.com>, Regina Oelfke <reginaoelfke@yahoo.com>, Sharon Kuethe <skuethe@gmail.com>, Susan Beckett <susanbeckette@gmail.com>, Linda Silfven <lkstig@icloud.com>, Hugh Hansen <hughvald@gmail.com>, Lesley Pritchard <wildwoodmisc@yahoo.com>, Beth Freeman <bethfreeman0312@gmail.com>, Kathy Fruge' <kjfruge@gmail.com>, Diane Hess <diane Hess@sbcglobal.net>, Michele Carey-Dave <Environmichele1@gmail.com>, Linda Seeger <lseeger@aol.com>, Susan Tukul <susantukul@yahoo.com>, Shelley Welby <threewelbys@gmail.com>, Pat Hartlep <patriciahartlep@yahoo.com>, Tracy Ward <heyskoop@yahoo.com>, Laura Ford <lfordcnp@gmail.com>, Suzanne Skubick <sskubick@gmail.com>, Gary Andert <gary.andert77@gmail.com>, Lori Heathfield <ljbfield@gmail.com>, Ada & Brian Tuck <sugarsweethoney21@yahoo.com>, David Grayson <dgupnorth@gmail.com>, Marilyn Morehead <morehead.m@gmail.com>, Birute Fleck <biruteos1950@gmail.com>, Sherry Sheldon <47sherry@charter.net>, Dennis Heathfield <dpheathfield59@gmail.com>, Suzy Boggeman (2) <sueboggie7@gmail.com>, BOB LEDDY <rcleddy@msn.com>, Susan Stockman <bluemoon.a27@gmail.com>, <sskubic@gmail.com>, <sandracantorcook@gmail.com>, Tanya Butler <mgoblupetoskey@gmail.com>, Janine Grose <grosejanine9@gmail.com>, Karen Colburn <karencolburn@loveupnorth.com>, Pam Decker <pamdecker123@gmail.com>, Eleanor West <ellielu57@gmail.com>, Joyce Bates <joycetbates@gmail.com>, Candy Greene <cj99greene@gmail.com>, Judi Silverman <judisilverman@hotmail.com>, Bridget Foltz <bridget.foltz@yahoo.com>, nancy michels <yogadancenancy58@hotmail.com>, Craig Williams <goblue.williams@gmail.com>, Barbara Shulick <bshulick@hotmail.com>, Michelle Archer <mewa1960@gmail.com>, Patricia Brewer <paulandpatbrewer@gmail.com>, <movingforwardchx@gmail.com>, Traverse Indivisible <traverseindivisible@187348606.mailchimpapp.com>, Susan Affholter <susanaff@hotmail.com>, <info@emmetdemocrats.org>, Charlevoix County Democratic Party <Democrats.Charlevoix@gmail.com>, <antrimdemsmich@gmail.com>, Alice Wright <wrightah@charter.net>  
Cc: LuAnne Kozma <luannekozma@gmail.com>

Hi,

I'm forwarding to everyone I can think of the email below warning that it appears that a majority of Hayes Township (Charlevoix County) trustees are in favor of allowing a huge, electricity and water guzzling data center (that will only need a few permanent employees) to be built in Hayes Township, possibly at the site of the old Big Rock nuclear power plant. This will affect not just Hayes Township residents, not just Charlevoix County residents, but residents even further afield. Data centers are becoming a major problem across the country. The trustees need to hear from residents who are opposed to this idea. The Board

of Trustees meets this Monday, February 9 at 7 pm. Please attend in person or by zoom (see information below).

I apologize if you get multiple emails. If you're wondering who I am, I don't know some of you, but I got your email address from emails sent by other activists. Please forward this email to everyone you think would be concerned about a local data center. And by the way, a data center is *only one of many major problems* with the master plan and zoning ordinance that Hayes Township is considering which would cause other types of environmental destruction as well.

Thanks for your help!

Winnie Boal

wlboal@gmail.com

231-547-6859

---

**From:** LuAnne Kozma <luannekozma@gmail.com>  
**Sent:** Saturday, February 7, 2026 5:36 PM  
**To:** Carol Umlor <umlorcarol4@gmail.com>; tim boyko <timothyboyko@gmail.com>; JoEllen <jobee949@gmail.com>; Jim Rudolph <jmr09799@gmail.com>; McMahon, Jim and Diane <jim\_mcmahon\_iii@yahoo.com>; Melvin Czechowski <mhczechow@aol.com>; Betty Henne <betty.henne@gmail.com>; Darcy Phelps <darcyphelps57@gmail.com>; Catherine Phelps <cathelps73@yahoo.com>; Kevin Willis <cmkwillis74@gmail.com>; Shelly VanWart <taxladybayshore@gmail.com>; Deborah Narten <dlnarten@gmail.com>; Bill Henne <wm.henne@gmail.com>; Ellis Boal <ellisboal@voyager.net>; Winnie Boal <wlboal@gmail.com>; Craig Williams <goblue.williams@gmail.com>; Danelle Hutcheon <dhutch3547@gmail.com>; Donald Gregory <DLGregoryII@gmail.com>  
**Subject:** Fwd: ACTION ALERT: (a bad) data center moratorium proposed for Hayes Township

----- Forwarded message -----

**From:** LuAnne Kozma <luannekozma@gmail.com>  
**Date:** Sat, Feb 7, 2026 at 5:13 PM  
**Subject:** ACTION ALERT: (a bad) data center moratorium proposed for Hayes Township  
**To:** <susan6837@gmail.com>

Dear Susan,

My cousin Winnie Boal urged us to write you, as chair of the Charlevoix County Women for Democracy, to put out an action alert to the people in your group.

**Action Needed:**

Public comment on Proposed Hayes Township Data Center Moratorium: It's the wrong moratorium, we need better language!

**What:** Hayes Township Board of Trustees will consider a proposed moratorium on Data Centers

**When:** Monday, February 9, 2026 at 7 pm

**How to Attend:** In person or by Zoom.

Hayes Township Hall, 9195 Major Douglas Sloan Road, Charlevoix MI 49720

Board of Trustee Zoom link is at upper right under Meetings at

[www.hayestownshipmi.gov](http://www.hayestownshipmi.gov)

**Public Comment periods** are soon after 7 pm, and also at end of meeting. Speakers are allowed only 3 minutes. Those attending in person are called on first, followed by attendees by Zoom.

**How to send in written comments prior to meeting:**

Send to both [clerk@hayestownshipmi.gov](mailto:clerk@hayestownshipmi.gov)

and [supervisor@hayestownshipmi.gov](mailto:supervisor@hayestownshipmi.gov)

**Talking Points:**

Yes we want a moratorium on data centers.

**But NO, we don't want this one!**

The moratorium language is terrible. It's written with a giant loophole, a process by which data centers that are "aggrieved" by the moratorium can apply for a fast-tracked hearing to allow them in. Hardly a moratorium.

6 months is not enough time. Other localities have done 12 months.

It should be a (non-zoning) Ordinance, not a resolution.

Urge the Board to not adopt this one, but come back with a better-written Ordinance that does not allow data centers a green-light, fast-tracked process to challenge the ordinance.

Hayes Township is critically located in Charlevoix County and a data center here, on Lake Michigan or anywhere in the township, will affect the region and the State.

The Big Rock Point former nuclear plant site is an exceptionally bad choice for a data center, since it has highly-radioactive wastes located there.

**Attached is the proposed moratorium Hayes Township is considering.**

Let me know if you have questions.


Thank you for helping us get the word out!


LuAnne Kozma

231-547-2828

---

2 attachments

 **Hayes Township proposed moratorium 2.9.2026.pdf**  
391K

 **Big\_Rock\_Point flyer .pdf**  
312K

---

clerk hayestownshipmi <clerkhayestownshipmi@gmail.com>  
To: Todd Millar <tmillar@parkerharvey.com>

Sun, Feb 8, 2026 at 12:04 PM

Todd,

The moratorium is on the Boards agenda for tomorrow. How do I address her remarks?  
Sent from my iPhone

Begin forwarded message:

[Quoted text hidden]

[Quoted text hidden]  
<Hayes Township proposed moratorium 2.9.2026.pdf>

<Big\_Rock\_Point flyer .pdf>

---

clerk hayestownshipmi <clerkhayestownshipmi@gmail.com>  
To: Matt Cunningham <trustee2@hayestownshipmi.gov>

Sun, Feb 8, 2026 at 6:47 PM

Sent from my iPhone


Begin forwarded message:


**From:** kristin baranski <kbaranski9333@gmail.com>  
**Date:** February 8, 2026 at 12:03:13 PM EST  
**To:** hayestownshipmi clerk <clerkhayestownshipmi@gmail.com>  
[Quoted text hidden]

[Quoted text hidden]

---

2 attachments

 **Hayes Township proposed moratorium 2.9.2026.pdf**  
391K

 **Big\_Rock\_Point flyer .pdf**  
312K

Todd Millar <tmillar@parkerharvey.com>

Mon, Feb 9, 2026 at 7:05 AM

To: clerk hayestownshipmi <clerkhayestownshipmi@gmail.com>

Cc: William Conklin <supervisorhayestownshipmi@gmail.com>, "Julie Collard (treasurerhayestownshipmi@gmail.com)" <treasurerhayestownshipmi@gmail.com>

Kristin,

The language about allowing a property owner to have a hearing on the issue if they felt that the moratorium deprived their property of all economic value is intended to avoid a unconstitutional takings claim. If a municipality through zoning deprives a property owner of all economic value, a very high burden to prove, then the zoning regulation will be deemed a taking and the municipality must pay fair value for the property taken. A number of municipalities that imposed moratoriums down state included this or similar language. I don't think it is absolutely necessary if the board wants to strip out that paragraph. The odds of someone being able to prove that a temporary moratorium has deprived their property of all economic value are slim. What it does is avoids someone simply going to court to file a lawsuit over the moratorium. They would have to seek relief from the Township Board before filing a lawsuit, giving the Township a heads up that there might be an issue. Like I said, I don't think that language is necessary but I liked it so included it. Feel free to give me a call if you would like to discuss.

Todd

Todd W. Millar

Attorney

DIRECT 231.486.4519 EMAIL tmillar@parkerharvey.com

PARKER HARVEY PLC

901 S. Garfield Ave, Suite 200, Traverse City, MI 49686

MAIN 231.929.4878 FAX 231.929.4182 www.parkerharvey.com



\*\*\*\*\* Parker Harvey PLC \*\*\*\*\* Please note that this email message and any attachments may contain privileged or confidential information that is protected against use or disclosure under federal and state law. If you have received this in error, please advise by immediate reply. Any transmission to persons other than the intended recipient shall not constitute a waiver of any applicable privileges. Any unauthorized use, disclosure, copying or dissemination is strictly prohibited.

[Quoted text hidden]

Hayes Trustee2 <trustee2hayestownshipmi@gmail.com>

Mon, Apr 20, 2026 at 12:20 PM

To: Clerk Hayes Township <clerk@hayestownshipmi.gov>

Sent from my iPhone

Begin forwarded message:

[Quoted text hidden]

[Quoted text hidden]

<Hayes Township proposed moratorium 2.9.2026.pdf>

---

**Fwd: Your MLive news to know today, Feb. 6, 2026 - mlive.com**

1 message

---

**Hayes Trustee2** <trustee2hayestownshipmi@gmail.com>  
To: Clerk Hayes Township <clerk@hayestownshipmi.gov>

Mon, Apr 20, 2026 at 12:20 PM

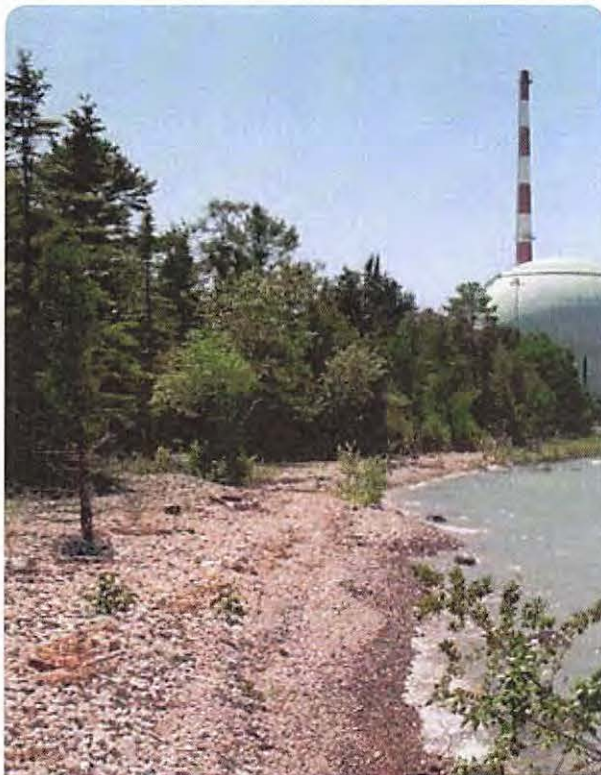
Sent from my iPhone

Begin forwarded message:

**From:** Roy Griffiths <rwgriffitts3@gmail.com>  
**Date:** February 11, 2026 at 10:34:25 AM EST  
**To:** Hayes supervisor <supervisorhayestownshipmi@gmail.com>, Kristin Baranski <clerkhayestownshipmi@gmail.com>, Hayes Treasurer <treasurerhayestownshipmi@gmail.com>, Matt Cunningham <trustee2@hayestownshipmi.gov>, Doug Kuebler <trustee1@hayestownshipmi.gov>  
**Cc:** Ron Van Zee <zoning@hayestownshipmi.gov>  
**Subject:** Your MLive news to know today, Feb. 6, 2026 - [mlive.com](https://www.mlive.com)

Well the cat is out of the bag on Hayes township and data centers. Our friends have made sure of that. Resort township is actively developing an ordinance on data centers but has not yet enacted a moratorium. I think you did the right thing in enacting one since the the publicity stunt backfired and made it a more visible issue. Two articles that appeared in a statewide source and of course the Channel four reports out of TC.

<https://www.mlive.com/news/2026/02/consumers-energy-eyeing-more-data-centers-and-4-other-major-stories.html>



Former nuclear plant site draws data center concerns in Northern Michigan  
[mlive.com](https://www.mlive.com)

**Fwd: Upcoming webinars feature data centers, website accessibility, & more**

1 message

Hayes Trustee2 &lt;trustee2hayestownshipmi@gmail.com&gt;

Mon, Apr 20, 2026 at 12:20 PM

To: Clerk Hayes Township &lt;clerk@hayestownshipmi.gov&gt;

Sent from my iPhone

Begin forwarded message:

**From:** Michigan Townships Association <education-michigantownships.org@shared1.ccsend.com>**Date:** February 16, 2026 at 3:31:15 PM EST**To:** trustee2@hayestownshipmi.gov**Subject:** Upcoming webinars feature data centers, website accessibility, & more**Reply-To:** education@michigantownships.org

## Your MTA Forecast: 100% chance of fresh insights on key township topics

There's 'snow' much to learn with MTA this winter! A blizzard of webinars is rolling in over the next month, with three can't-miss sessions designed to keep you informed, prepared and a step ahead this season.

From **data center impacts** and **ADA website compliance** to **flipping complaints into constructive action**, this lineup delivers practical insights you can use right away.



Don't get left out in the cold... read on for details or to register now!

This Wednesday, Feb. 18 at noon:

### ***Cloud Control: Navigating Data Center Impacts***

*(MTA member townships only)*

As demand accelerates, townships are fielding data centers proposals that raise complex questions about zoning, infrastructure capacity, energy use, taxation and local control. Get timely insights into the legal considerations officials should understand before an application appears. **Don't miss this** 0298



**opportunity to hear from MTA legal counsel and position your township to respond confidently and proactively.** Learn how to ask the right questions, identify potential risks and respond thoughtfully and lawfully to data center projects.

[Click here to register now!](#)

## Free MTA Q&A webinar on ADA website requirements March 10 at 11 a.m.

The deadline for your township website to meet Americans with Disabilities Act (ADA) accessibility requirements is quickly approaching. **Join MTA as we team up with Kyle Shumaker from the Shumaker Technology Group for this FREE webinar** to learn what “accessible” means, how to tell if your website is compliant and how to *keep* it compliant. Click the image below for details and registration!



## March 18 at noon: *Squeaky Wheel Maintenance: Using Policies to Turn Complaints into Constructive Input*

We all know “the squeaky wheel gets the grease”—but should it? **When a single board member, vocal resident or small group dominates the conversation, how can you tell whether you’re facing a legitimate issue or a squeaky wheel?** Review techniques for evaluating complaints, distinguishing problems from noise and proactively channeling the squeak into constructive input.



[Click here to register now!](#)

Can't watch live? No worries! MTA webinars are recorded and made available later in MTA's [Online Learning Center](#).

New to Zoom or need assistance joining a live webinar? Get [troubleshooting tips here](#).



**Have you heard?** The entire *Now You Know* series is FREE to MTA Online subscribers at the Premium Pass level. [Click here](#) to learn how your township can take advantage of our MTA Online subscription discounts.

**Need registration assistance?** Email [rebecca@michigantownships.org](mailto:rebecca@michigantownships.org). For other event-related questions, email [education@michigantownships.org](mailto:education@michigantownships.org).

Michigan Townships Association | 512 Westshire Drive | Lansing, MI 48917 US

[Unsubscribe](#) | [Update Profile](#) | [Constant Contact Data Notice](#)



Try email marketing for free today!

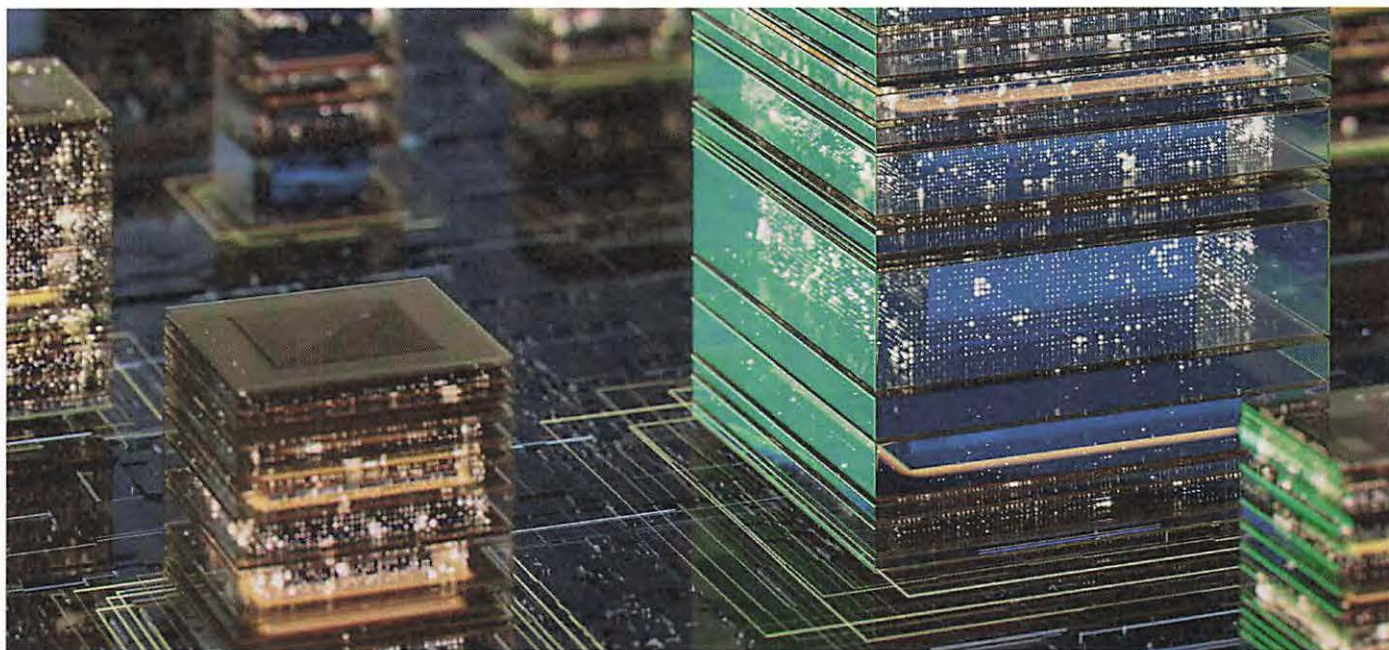
SPONSORED CONTENT BY

**SIEMENS**

WIRED INSIDER

## **The 10x Challenge: How AI Factories Are Redefining Energy Infrastructure**

*Why the future of AI depends on an innovative redesign of power, cooling, automation and grid integration.*



ALLEX

[SAVE THIS STORY](#)

**IN THE PRE-AI** days of the internet, data centers were designed and built to store, process, and serve data. Racks of CPU-based servers and storage arrays filled cavernous rooms, storing data redundantly and distributing it to multiple service providers at once. The compute workloads dedicated to this process were manageable enough that they could be virtualized, allowing many virtual machines to share a single physical server. Thanks to this, most businesses didn't need to manage their own data centers, instead renting capacity from cloud providers scaled to their own specific needs.

The AI era is changing all of that.

AI factories consume about 10 times as much energy, produce 10 times as much heat, and have 10 times the complexity of traditional data centers.

Meeting the 10x challenge requires careful engineering—and it's still just part of what hyperscalers face in standing up AI factories. From grid efficiency and liquid cooling to virtual design and uptime demands, the entire playbook on building and operating digital infrastructure facilities is being rewritten in real time.

### **AI's Massive Power and Cooling Demands**

The 10x demands of AI factories over traditional data centers come from their distinct purposes. Rather than just storing and processing information, AI factories generate intelligence. They do so using dense clusters of high-performance GPUs that can require over 100 kilowatts per rack, more than an order of magnitude greater than the handful of kilowatts used by a traditional data center rack.

With that much energy in play, reliable power distribution is paramount. When an AI factory is built, either from the ground up or retrofitted from a traditional data center, the foundation is vital electrical equipment to power the facility and its processes. Medium- and low-voltage equipment dynamically balance energy loads with the aim of creating a robust and reliable foundation of power distribution. Meanwhile, a combination of switchgear, busway, and prefabricated modular solutions are used to meet the facility's specific needs.

All of that energy generates lots of heat; the thermal loads in AI factories can be extreme. So extreme that the default air cooling of traditional data centers isn't an option. Instead, liquid cooling is needed to help keep temperatures down. Siemens, Nvidia, and nVent created a joint reference liquid cooling architecture specifically for AI factories that integrates a facility's industrial-grade electrical systems directly with liquid cooling tech, keeping the power flowing and the heat in check.

infrastructure is deployed. Leveraging advanced industrial grade automation to manage the interplay of compute, power and cooling as well as the grid interface creates the scalable foundation for the AI factories of the future.”

### **Hyperscalers’ Responsibility to the Grid**

When talking about the 10x challenge and the unprecedented power demands of AI factories, it’s impossible to ignore the hurdles of connecting to the existing grid. Grid interconnection queues can stretch for years as utilities tighten requirements, trying to meet previously unimaginable levels of demand.

It’s a systemic issue that’s confronting hyperscalers and utilities alike. With the rates of energy they consume, AI factory operators need to think of themselves as grid partners rather than just customers.

One way Siemens consultants help operators do this is by designing AI factories that support grid health. By load shifting during times of peak demand and dynamically coordinating with utility systems, an AI factory can send energy to the grid in addition to pulling from it. Liquid cooling plays a significant role as well, reducing energy waste by up to 90 percent compared to traditional air cooling.

### **The Importance of Designing for Efficiency**

Another major difference between a traditional data center and an AI factory is the timeline for construction. While data centers can take years to build, hyperscalers want their AI factories operational within 12 to 15 months.

full operational lifecycle of an AI factory.

Of course, with AI advancing at such a rapid clip, questions are swirling about just how long AI factory lifecycles will be. For hyperscalers, this makes adaptability all the more important. To ensure that today's AI factories can also be tomorrow's AI factories, they need to be designed for adaptability from day one.

### **Uptime Above All**

All this complexity is in service of one thing: 99.99999 percent uptime under extreme constraints. Hyperscalers racing to build the infrastructure of the future know that cutting-edge AI demands it. There's no tolerance for interruptions in model training.

Delivering perfect uptime at gigawatt scale is a tall order demanding innovation and a reimagining of how things are done. But when AI factory operators have meticulous, chip-to-grid-to-building integration across power, cooling, automation, and digital operations, they'll be able to meet the 10x challenge head-on.

[Explore Siemens' end-to-end AI factory solutions.](#)

READ MORE



## MAGA Is Increasingly Convinced the Trump Assassination Attempt Was Staged

Conspiracy theories about the Butler, Pennsylvania, shooting have ramped up in recent weeks as once steadfast Trump supporters turn on the president.

DAVID GILBERT



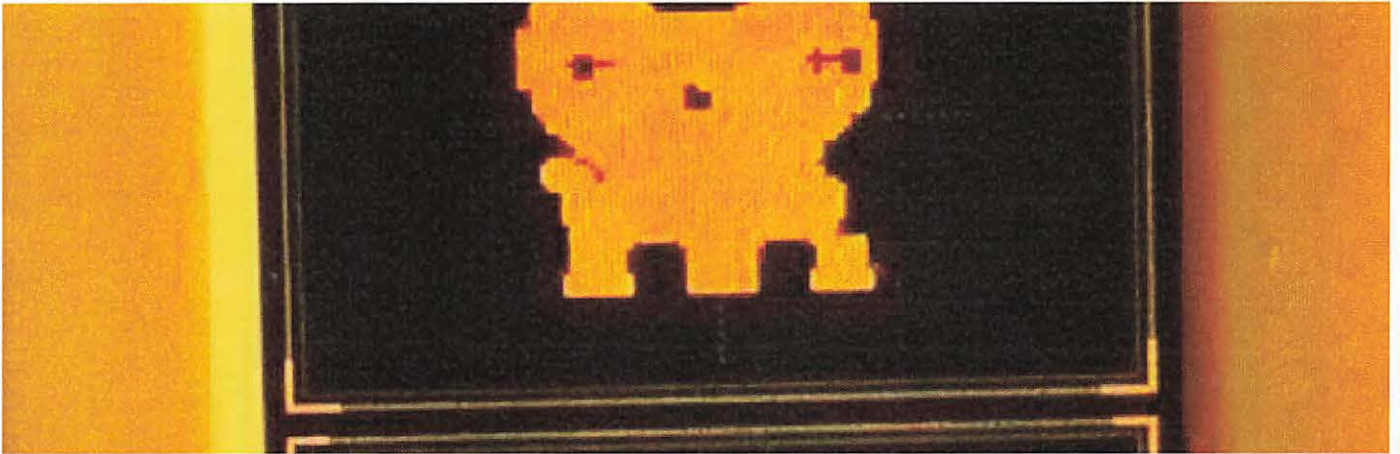
LORENZO LAMPERTI



## The 8 Best Movies to Stream This Month

*28 Years Later: The Bone Temple*, *Crime 101*, and *Deathstalker* are among the films deserving of your eyeballs this month

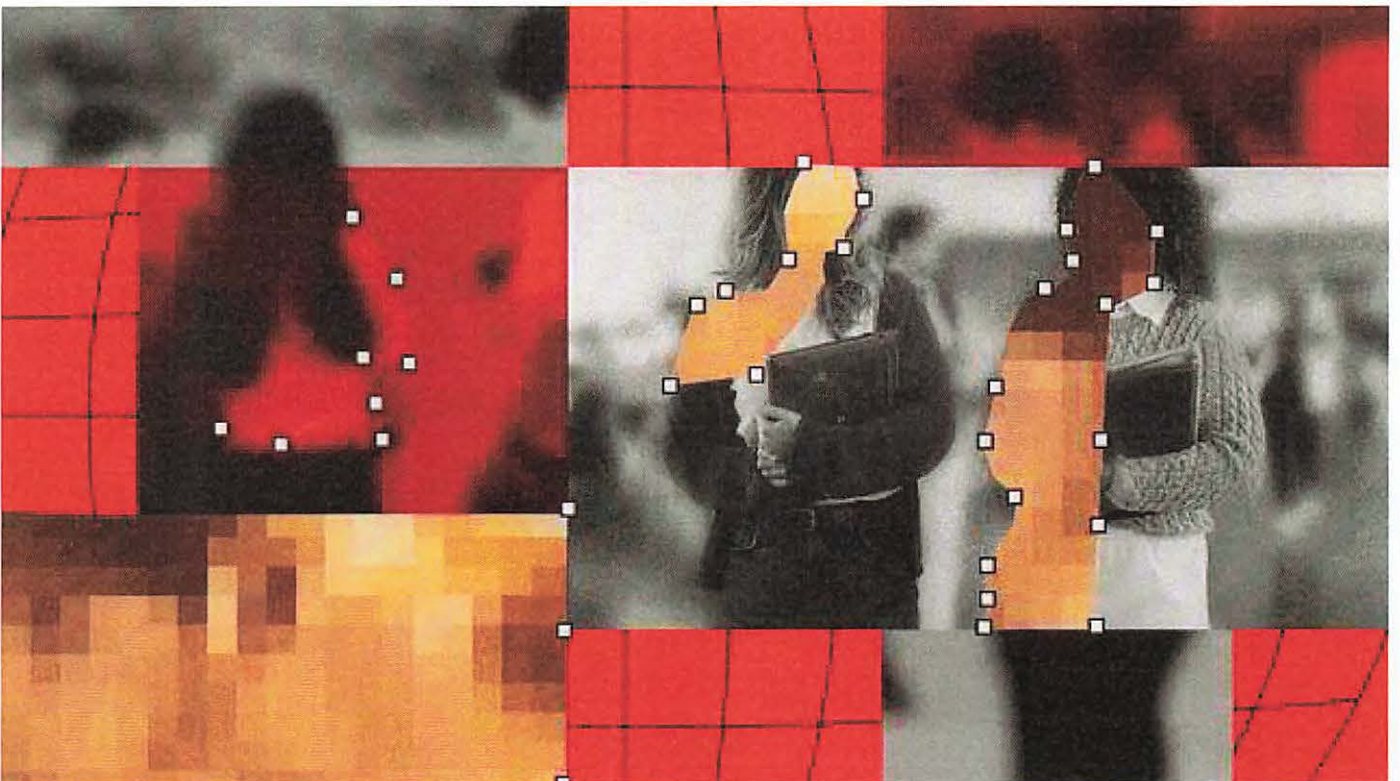
MATT KAMEN



## They Built the 'Cursor for Hardware.' Now, Anthropic Wants In

Schematik is a program that aims to help people vibe code for physical devices. Hopefully, it won't blow anything up.

BOONE ASHWORTH





## The Shocking Secrets of Madison Square Garden's Surveillance Machine

Famously vengeful Knicks owner Jim Dolan has long spied on people at his iconic arenas. WIRED goes deep inside the operation that allegedly tracked a trans woman, lawyers, protesters, and more.

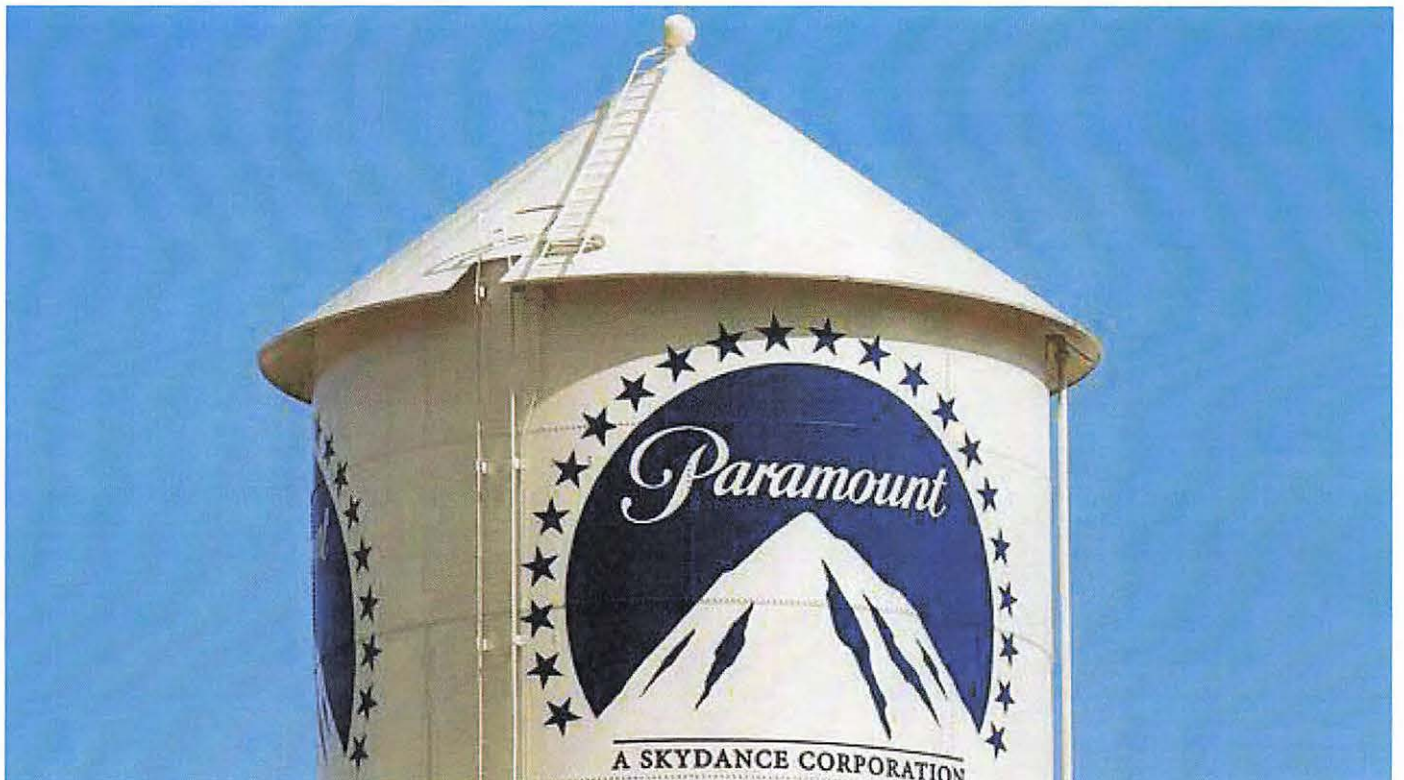
ROBERT SILVERMAN



## The Fanfare Around the Band Geese Actually Was a Psyop

The Brooklyn band Geese was labeled an “industry plant” by those who questioned its sudden ubiquity. Maybe it was.

JOHN SEMLEY





## Government Workers Say They're Getting Inundated With Religion

"This has never happened before," one government employee tells WIRED. "I have never gotten a message like this from anyone."

VITTORIA ELLIOTT



## Spoofed Tankers Are Flooding the Strait of Hormuz. These Analysts Are Tracking Them

Marine insurers and oil traders want to know what's going on in one of the world's most critical waterways. As the volume of disappearing ships in the area increases, analysts are getting creative.

AARIAN MARSHALL





## **MAGA Indians Went All In on Trump. Many Right-Wingers Can't Stand Them**

South Asians are a powerful, visible minority in the Trump administration. They're also facing a racist backlash, fueled in part by the white nationalist Groyper movement.

ASHWIN RODRIGUES



# Subject: Michigan "411" Rule -- Utility Right to Serve



'Joe McHugh' via Hayes DCworkgroup <hayes-dcworkgroup@googlegroups...>  
to Roy Griffiths, Hayes DCworkgroup

Thu, Apr 9, 1:59 PM (11 days

Attached is the actual law R460.3411 Extension of Electric Service subsection 9 that deals with industrial customers .

*Regardless of any other provisions in these rules, a prospective industrial customer, as defined under industrial*

*classification manual, division D, manufacturing, for 3-phase service that will have a connected load of more than 500 kilowatts shall have its choice of service from any nearby utility that is willing to construct the necessary facilities. The facilities that are constructed to serve an industrial customer that would otherwise have been served by another utility shall not qualify as a measuring point in determining which utility will serve new customers in the future.*

This is what electric utilities use to determine what utility will serve an area or location. The key points to consider for open choice are:

1. Prospective Industrial Customer
  - a. Defined under the industrial classification manual , division D
2. 3 phase service
3. Connected load more than 500 KW
4. Facilities constructed to only serve that customer
  - a. ie -substation and lines

Here is a link to the US department of Labor SIC Manual Division D.  
[Division D: Manufacturing | Occupational Safety and Health Administration](#)

The Division D does NOT cover:

- Data Centers
  - Data Centers fall under Division I Services.
- Mining
  - Mining falls under Division B
- Agriculture
  - Agriculture falls under Division A
  - If the raw materials are grown on the farm

I would recommend we use the connected load of 500 KW or more as a criteria for determining "large scale" Data Centers.

To put this in perspective some sized loads :

DEPARTMENT OF LABOR AND ECONOMIC GROWTH  
PUBLIC SERVICE COMMISSION  
TECHNICAL STANDARDS FOR ELECTRIC SERVICE

(By authority conferred on the public service commission by section 7 of 1909 PA 106, section 5 of 1919 PA 419, and sections 4 and 6 of 1939 PA 3, MCL 460.557, 460.55, 460.4, and 460.6.)

PART 1. GENERAL PROVISIONS

R 460.3101 Applicability; purpose; modification; adoption of rules and regulations by utility.

Rule 101. (1) These rules apply to electric utilities that operate within the state of Michigan under the jurisdiction of the public service commission.

(2) These rules are intended to promote safe and adequate service to the public and to provide standards for uniform and reasonable practices by utilities.

(3) These rules do not relieve a utility from any of its duties under the laws of this state.

(4) Each utility may adopt reasonable rules and regulations governing its relations with customers which it finds necessary and which are not inconsistent with these rules for electric service. Adopted rules and regulations shall be filed with, and approved by, the commission.

History: 1983 AACS; 1996 AACS.

R 460.3102 Definitions.

Rule 102. As used in these rules:

(a) "Acceptable to the commission" means that a commission order has been obtained.

(b) "Approved by the commission" means that a commission order has been obtained.

(c) "Commission" means the Michigan public service commission.

(d) "Customer," except as used in R 460.3411, means any person, firm, association, or corporation, or any agency of the federal, state, county, or municipal government that purchases electric service supplied by a utility.

(e) "Electric plant" means all real estate, fixtures, or property that is owned, controlled, operated, or managed in connection with, or to facilitate the production, transmission, and delivery of, electric energy.

(f) "File" means to deliver to the commission's executive secretary.

(g) "Meter," unless otherwise qualified, means a device that measures and registers the integral of an electrical quantity with respect to time.

(h) "Metering error" means a failure to accurately measure and record all of the electrical quantities that are required by the applicable rate or rates.

(i) "Meter shop" means a shop where meters are inspected, repaired, and tested. A meter shop may be at a fixed location or may be mobile.

(j) "Premises" means an undivided piece of land that is not separated by public roads, streets, or alleys.

(k) "Submit" means to deliver to the commission's designated representative.

(l) "Utility" means an electric company, whether private, corporate, or cooperative, that operates under the jurisdiction of the commission.

History: 1983 AACS; 1996 AACS; 2008 AACS.

R 460.3103 Rescission.

Rule 103. R 460.501 to R 460.505 of the Michigan Administrative Code, appearing on pages 4695 to 4709 of the 1979 Michigan Administrative Code, are rescinded.

History: 1983 AACCS.

## PART 2. RECORDS AND REPORTS

R 460.3201 Records; location; examination.

Rule 201. Upon a request by the commission or its designated representative, records which are required by these rules or which are necessary for the administration of these rules shall be available within the state of Michigan for examination by the commission or its designated representative.

History: 1983 AACCS; 1996 AACCS.

R 460.3202 Records; preservation.

Rule 202. Unless otherwise specified in these rules, or by other order of the commission, all records that are required by these rules shall be preserved for the period of time specified in R 460.2501 et seq. of the Michigan Administrative Code.

History: 1983 AACCS.

R 460.3203 Documents and information; required submission.

Rule 203. A utility shall submit all of the following documents and information and shall maintain the documents and information in a current status:

- (a) A copy of the utility's tariff.
- (b) A copy of the utility's rules and standards that are made available to the public covering meter and service installation.
- (c) A copy of each type of customer bill form.
- (d) A list of the cities, villages, and townships that the utility serves. Upon a request by the commission or its designated representative, the utility shall also provide copies of the associated franchise information.
- (e) The name, title, address, and telephone number of the persons to be contacted in connection with the following matters:
  - (i) General management duties.
  - (ii) Customer relations (complaints).
  - (iii) Engineering operations.
  - (iv) Meter tests and repairs.
  - (v) Emergencies during non-office hours.
- (f) An annual copy of the utility's construction budget, which shall be updated for all major changes to generating and transmission facilities.
- (g) An "Electric Service" monthly report, on forms suitable to the commission, that shows information concerning the utility's acquisition and disposition of electric energy and other information as required. The reports shall be submitted by investor-owned utilities within 50 days after the end of the quarter reported and by rural electric cooperatives within 50 days after the end of the month reported.
- (h) A map or maps that show the utility's operating area within this state, including generating stations and transmission lines with their voltage designations. Upon a request by the commission or its designated representative, the utility shall also make available a map or maps that show all of the following:
  - (i) Distribution lines with the number of phases designated.
  - (ii) State boundary crossings.
  - (iii) Service areas.

History: 1983 AACS; 1996 AACS.

R 460.3204 Customer records; retention period; content.

Rule 204. (1) The utility shall retain records as necessary to comply with R 460.3309. The records shall be retained for not less than 3 years.

(2) Records for customers shall show, if applicable, all of the following information:

- (a) Kilowatt-hour meter reading.
- (b) Kilowatt-hour consumption.
- (c) Kilowatt, kilovolt ampere, and kilovar meter reading.
- (d) Kilowatt, kilovolt ampere, and kilovar measured demand.
- (e) Kilowatt, kilovolt ampere, and kilovar billing demand.
- (f) Total amount of bill.

History: 1983 AACS; 1996 AACS; 2008 AACS.

### PART 3. METER REQUIREMENTS

R 460.3301 Metered measurement of electricity required; exceptions.

Rule 301. (1) All electricity that is sold by a utility shall be on the basis of meter measurement, except where the consumption can be readily computed or except as provided for in a utility's filed rates.

(2) Where practicable, the consumption of electricity within the utility or by administrative units associated with the utility shall be metered.

(3) Meters shall be in compliance with part 6 of these rules.

History: 1983 AACS; 1996 AACS.

R 460.3302 Rescinded.

History: 1983 AACS; 1996 AACS.

R 460.3303 Meter reading data.

Rule 303. The meter reading data shall include all of the following information:

- (a) A suitable designation identifying the customer.
- (b) Identifying number or description of the meter, or both.
- (c) Meter readings or, if a reading was not taken, an indication that a reading was not taken.
- (d) Any applicable multiplier or constant.

History: 1983 AACS; 1996 AACS.

R 460.3304 Meter data collection system.

Rule 304. A meter data collection system that takes data from recording meters shall indicate all of the following:

- (a) The date of the record.
- (b) The equipment numbers.
- (c) A suitable designation identifying the customer.
- (d) The appropriate multipliers.

History: 1983 AACS; 1996 AACS.

R 460.3305 Meter multiplier.

Rule 305. If it is necessary to apply a multiplier to the meter registration, then the multiplier shall be displayed on the face of the meter.

History: 1983 AACS; 1996 AACS.

R 460.3306 Rescinded.

History: 1983 AACS; 1996 AACS; 2008 AACS.

R 460.3307 Rescinded.

History: 1983 AACS; 1996 AACS.

R 460.3308 Standards of good practice; adoption by reference.

Rule 308. In the absence of specific rules of the commission, a utility shall apply the provisions of the publications set forth in this rule as standards of accepted good practice. The following standards are available from the American National Standards Institute (ANSI), Customer Service, 25 West 43rd St., 4th floor, New York, New York, 10036, USA, telephone number:1-212-642-4900 or via the internet at web-site: <http://webstore.ansi.org/ansidocstore/>; at the cost listed below as of the time of adoption of these rules, plus a handling charge (for paper copies):

(a) American National Standards Institute standards for electricity meters ANSI C12.1-2001 and C12.20-2002. Cost \$120.00.

(b) American National Standards Institute/American Society for Quality Sampling Procedures and Tables for Inspection by Variables for Percent Nonconforming (ANSI/ASQ Z1.9-2003). Cost \$100.00.

(c) American National Standards Institute IEEE Standard Requirements for Instrument Transformers (ANSI C57.13-1993). Cost \$110.00.

(d) American National Standards Institute IEEE Standard for High Accuracy Instrument Transformers, IEEE Std. C57.13.6-2005. Cost \$35.00.

(e) The standards adopted in subdivisions (a) to (d) of this rule are also available for inspection at the Michigan Public Service Commission, 6545 Mercantile Way, P.O. Box 30221, Lansing, Michigan, 48909. Copies of these standards may also be obtained from the MPSC at the cost charged by ANSI, plus \$20.00 for shipping and handling.

History: 1996 AACS; 2008 AACS.

R 460.3309 Metering inaccuracies; billing adjustments.

Rule 309. (1) An adjustment of bills for service for the period of inaccuracy shall be made for over registration and may be made for under registration under any of the following conditions:

(a) If a meter creeps.

(b) If a metering installation is found upon any test to have an average inaccuracy of more than 2.0%.

(c) If a demand metering installation is found upon any test to have an average inaccuracy of more than 1.0% in addition to the inaccuracies allowed under R 460.3609.

(d) If a meter registration has been found to be inaccurate due to apparent tampering by a person or persons known or unknown.

(2) The amount of the adjustment of the bills for service shall be calculated on the basis that the metering equipment is 100% accurate with respect to the testing equipment used to make the test. The average accuracy of watt-hour meters shall be calculated in accordance with R 460.3616.

(3) If the date when the inaccuracy in registration began can be determined, then that date shall be the starting point for determining the amount of the adjustment and shall be subject to subrule (12) of this rule.

(4) If the date when the inaccuracy in registration began cannot be determined, then it is assumed that the inaccuracy existed for the period of time immediately preceding discovery of the inaccuracy that is equal to 1/2 of the time since the meter was installed on the present premises, 1/2 of the time since the last test, or 6 years, whichever is the shortest period of time, except as otherwise provided in subrule (5) of this rule and subject to subrule (12) of this rule.

(5) The inaccuracy in registration due to creep shall be calculated by timing the rate of creeping under R 460.3607 and by assuming that the creeping affected the registration of the meter for the period of time immediately preceding discovery of the inaccuracy that is equal to 1/4 of the time since the meter was installed on the present premises, 1/4 of the time since the last test, or 6 years, whichever is the shortest period of time, subject to subrule (12) of this rule.

(6) If the average inaccuracy cannot be determined by test because part, or all, of the metering equipment is inoperative, then the utility may use the registration of check metering installations, if any, or estimate the quantity of energy consumed based on available data. The utility shall advise the customer of the metering equipment failure and of the basis for the estimate of the quantity billed. The same periods of inaccuracy shall be used as explained in this rule.

(7) Recalculation of bills shall be on the basis of the recalculated monthly consumption.

(8) If the recalculated bills indicate that an amount is due an existing customer or that more than \$10.00 is due a former customer of the utility, then the utility shall refund the full amount of the difference between the amount paid and the recalculated amount.

(9) Refunds shall be made to the 2 most recent customers who received service through the meter found to be inaccurate. If a former customer of the utility, a notice of the amount of the refund shall be mailed to such customer at the last known address. The utility shall, upon demand made by the customer within 3 months of mailing of the notice, forward the refund to the customer.

(10) If the recalculation of billing as a result of a metering inaccuracy indicates that more than \$1.00 is owed to the utility by an existing customer or that more than \$10.00 is owed to the utility by a former customer, then the utility may issue a bill for the amount, subject to subrule (12) of this rule.

(11) Each utility may establish a policy setting a minimum amount for which it may bill a customer due to under registration that is more than the amounts in subrule (10) of this rule. The minimum amount established in the utility policy shall be applied in all cases of under registration to determine whether the customer will be billed for the amount due the utility because of under registration.

(12) Except in cases of tampering, back billing of customers for metering inaccuracies is limited to the 2-year period immediately preceding discovery of the inaccuracy. The customer shall be given a reasonable time in which to pay the amount of the back billing, after consideration of the amount of the back bill and the duration of the inaccuracy, and service shall not be shut off during this time for nonpayment of the amount of the back billing if the customer is complying with the repayment agreement.

History: 2008 AACS.

#### PART 4. CUSTOMER RELATIONS

R 460.3401 Rescinded.

History: 1983 AACS; 1996 AACS; 2008 AACS.

R 460.3402 Rescinded.

History: 1983 AACS; 1996 AACS; 2008 AACS.

R 460.3403 Rescinded.

History: 1983 AACS; 1996 AACS; 2008 AACS.

R 460.3404 Rescinded.

History: 1983 AACS; 1996 AACS; 2008 AACS.

R 460.3405 Rescinded.

History: 1983 AACS; 1996 AACS.

R 460.3406 Rescinded.

History: 1983 AACS; 1996 AACS; 2008 AACS.

R 460.3407 Rescinded.

History: 1983 AACS; 1996 AACS; 2008 AACS.

R 460.3408 Temporary service; cost of installing and removing equipment owned by utility.

Rule 408. If the utility renders temporary service to a customer, it shall require that the customer bear the cost of installing and removing the utility-owned equipment in excess of any salvage realized.

History: 1983 AACS; 1996 AACS.

R 460.3409 Protection of utility-owned equipment on customer's premises.

Rule 409. (1) The customer shall use reasonable diligence to protect utility-owned equipment on the customer's premises and to prevent tampering or interference with the equipment. The utility may shut off service in accordance with applicable rules of the commission if the metering or wiring on the customer's premises has been tampered with or altered in any manner that allows unmetered or improperly metered energy to be used or to cause an unsafe condition.

(2) If a utility shuts off service for unauthorized use of service, then both of the following provisions shall apply:

(a) The utility may bill the customer for the unmetered energy used and any damages that have been caused to utility-owned equipment.

(b) The utility is not required to restore service until the customer does all of the following:

(i) Makes reasonable arrangements for payment of the charges in subdivision (a) of this subrule.

(ii) Agrees to pay the approved reconnection charges.

(iii) Agrees to make provisions and pay charges for relocating utility-owned equipment or making other reasonable changes that may be requested by the utility to provide better protection for its equipment.

(iv) Provides the utility with reasonable assurance of the customer's compliance with the utility's approved standard rules and regulations.

(3) Failure to comply with the terms of an agreement to restore service after service has been shut off pursuant to subrule (1) of this rule shall be cause to shut off service in accordance with the rules of the utility and the commission.

(4) If service is shut off pursuant to subrule (3) of this rule and the utility must incur extraordinary expenses to prevent the unauthorized restoration of service, the utility may bill the customer for the expenses, in addition to all other charges that may apply under this rule, and may require that the expenses and other charges be paid before restoring service. A reasonable effort shall be made to notify the customer at the time of shutoff that additional charges may apply if an attempt is made to restore service that has been shut off.

(5) The customer of record who benefits from the unauthorized use shall be responsible for payment to the utility for the energy consumed.

(6) The utility may bill the customer for the reasonable actual cost of the tampering investigation.

History: 1983 AACS; 1996 AACS.

R 460.3410 Extension of facilities plan.

Rule 410. Each utility shall develop a plan, approved by the commission, for the extensions of facilities where the investment is in excess of that included in the regular rates for service and for which the customer is required to pay all or part of the cost.

History: 1983 AACS; 1996 AACS.

R 460.3411 Extension of electric service in areas served by 2 or more utilities.

Rule 411. (1) As used in this rule:

(a) "Customer" means the buildings and facilities served rather than the individual, association, partnership, or corporation served.

(b) "Distances" means measurements which are determined by direct measurement from the closest point of a utility's existing distribution facilities to the customer's meter location and which are not determined by the circuit feet involved in any extension.

(c) "Distribution facilities" means single-phase, V-phase, and 3-phase facilities and does not include service drops.

(2) Existing customers shall not transfer from one utility to another.

(3) Prospective customers for single-phase service that are located within 300 feet of the distribution facilities of 2 or more utilities shall have the service of their choice.

(4) Prospective customers for single-phase service that are located more than 300 feet, but within 2,640 feet, from the distribution facilities of 1 or more utilities shall be served by the closest utility.

(5) Prospective customers for single-phase service that are located more than 2,640 feet from the distribution facilities of any utility shall have the service of their choice, subject to the provisions of subrule (10) of this rule.

(6) Prospective customers for 3-phase service that are located within 300 feet of the 3-phase distribution facilities of 2 or more utilities shall have the service of their choice.

(7) Prospective customers for 3-phase service that are located more than 300 feet, but within 2,640 feet, from the 3-phase distribution facilities of 1 or more utilities shall be served by the closest utility.

(8) Prospective customers for 3-phase service that are located more than 2,640 feet from the 3-phase distribution facilities of any utility shall have the service of their choice, subject to the provisions of subrule (10) of this rule.

(9) Regardless of any other provisions in these rules, a prospective industrial customer, as defined under the industrial classification manual, division D, manufacturing, for 3-phase service that will have a connected load of more than 500 kilowatts shall have its choice of service from any nearby utility that is willing to construct the necessary facilities. The facilities that are constructed to serve an industrial customer that would otherwise have been served by another utility shall not qualify as a measuring point in determining which utility will serve new customers in the future.

(10) The extension of distribution facilities, except as provided in subrules (3), (4), (6), and (7) of this rule, where an extension will be located within 1 mile of another utility's distribution facilities, shall

not be made by a utility without first giving the commission and any affected utility 10 days' notice of its intention by submitting a map showing the location of the proposed new distribution facilities, the location of the prospective customers, and the location of the facilities of any other utility in the area. If no objections to the proposed extension of distribution facilities are received by the commission within the 10-day notice period, the utility may proceed to construct the facilities. If objections are received, the determination of which utility will extend service may be made the subject of a public hearing and a determination by the commission, upon proper application by any affected party.

(11) The first utility serving a customer pursuant to these rules is entitled to serve the entire electric load on the premises of that customer even if another utility is closer to a portion of the customer's load.

(12) A utility may waive its rights to serve a customer or group of customers if another utility is willing and able to provide the required service and if the commission is notified and has no objections.

(13) Nothing contained in these rules shall be construed to circumvent the requirements of Act No. 69 of the Public Acts of 1929, as amended, being S460.501 et seq. of the Michigan Compiled Laws, or to authorize a utility to extend its service into a municipality then being served by another utility without complying with the provisions of Act No. 69 of the Public Acts of 1929, as amended.

(14) Regardless of other provisions of this rule, except subrule (9), a utility shall not extend service to a new customer in a manner that will duplicate the existing electric distribution facilities of another utility, except where both utilities are within 300 feet of the prospective customer. Three-phase service does not duplicate single-phase service when extended to serve a 3-phase customer.

(15) The first utility to serve a customer in a new subdivision under the other provisions of this rule has the right to serve the entire subdivision. In extending service to reach the subdivision, the utility shall not duplicate the existing facilities of another utility.

History: 1983 AACS; 1996 AACS.

## PART 5. ENGINEERING

R 460.3501 Electric plant; construction, installation, maintenance, and operation pursuant to good engineering practice required.

Rule 501. The electric plant of the utility shall be constructed, installed, maintained, and operated pursuant to accepted good engineering practice in the electric industry to assure, as far as reasonably possible, continuity of service, uniformity in the quality of service furnished, and the safety of persons and property.

History: 1983 AACS.

R 460.3502 Standards of good practice; adoption by reference.

Rule 502. In the absence of specific rules of the commission, a utility shall apply the standards of accepted good practice that are adopted by reference in R 460.811 et seq.

History: 1983 AACS; 1988 AACS; 1996 AACS.

R 460.3503 Utility plant capacity.

Rule 503. The electric capacity regularly available from all sources shall be large enough to meet all normal demands for service and to provide a reasonable reserve for emergencies.

History: 1983 AACS; 1996 AACS.

R 460.3504 Electric plant inspection program.

Rule 504. Each utility shall adopt a program of inspection of its electric plant to ensure safe and reliable operation. The frequency of the various inspections shall be based on the utility's experience

and accepted good practice. Each utility shall keep sufficient records to verify compliance with its inspection program.

History: 1983 AACS; 1996 AACS.

R 460.3505 Utility line clearance program.

Rule 505. Each utility shall adopt a program of maintaining adequate line clearance through the use of industry-recognized guidelines. A line clearance program shall recognize the national electric safety code standards that are adopted by reference in R 460.811 et seq. The program shall include tree trimming.

History: 1996 AACS.

#### PART 6. METERING EQUIPMENT INSPECTIONS AND TESTS

R 460.3601 Customer-requested meter tests.

Rule 601. (1) Upon request by a customer to a utility, a utility shall make a test of the meter serving the customer. Any charge to the customer shall conform with the utility's filed and approved rates and rules. Provided, however, that the utility need not make more than 1 test in any 12-month period.

(2) The customer, or his or her representative, may be present when his or her meter is tested.

(3) A report of the results of the test shall be made to the customer within a reasonable time after the completion of the test, and a record of the report, together with a complete record of each test, shall be kept on file at the office of the utility.

History: 1983 AACS.

R 460.3602 Meter and associated device inspections and tests; certification of accuracy.

Rule 602. Every meter shall be inspected and tested, and associated device(s) shall be inspected, in the meter shop of the utility, or a meter testing facility certified by the utility, before being placed in service. The accuracy of each meter shall be certified to be within the tolerances permitted by these rules, except that the utility may rely on the certification of accuracy by the manufacturer on all new meters.

History: 1983 AACS; 2008 AACS.

R 460.3603 Meters with transformers; post-installation inspection; exception.

Rule 603. Meters with associated instrument transformers and phase shifting transformers shall be inspected to determine the proper operation and wiring connections. Inspections shall be made within 60 days after installation by a qualified person who, when possible, should be someone other than the original installer. All self-contained, socket-type meters are excluded from post-installation inspections, except that the original installation shall be inspected when the meter is installed.

History: 1983 AACS.

R 460.3604 Meters and associated devices; removal tests.

Rule 604. All meters and associated devices shall be tested after they are removed from service unless they are retired because of obsolescence.

History: 1983 AACS; 1995 AACS.

R 460.3605 Metering electrical quantities.

Rule 605. (1) All electrical quantities that are to be metered as provided in R 460.3301 shall be metered by commercially acceptable instruments which are owned and maintained by the utility.

(2) Every reasonable effort shall be made to measure at 1 point all the electrical quantities necessary for billing a customer under a given rate.

(3) Metering facilities located at any point where energy may flow in either direction and where the quantities measured are used for billing purposes shall consist of meters equipped with ratchets or other devices to prevent reverse registration and shall be so connected as to separately meter the energy flow in each direction, unless used to implement a utility tariff approved by the commission for service provided under a net metering program.

(4) Reactive metering shall not be employed for determining the average power factor for billing purposes where energy may flow in either direction or where the customer may generate an appreciable amount of his or her energy requirements at any time, unless suitable directional relays and ratchets are installed to obtain correct registration under all conditions of operation.

(5) All electric service of the same type rendered under the same rate schedule shall be metered with instruments having like characteristics, except that the commission may be requested to approve the use of instruments of different types if their use does not result in unreasonable discrimination. Either all of the reactive meters which may run backwards or none of the reactive meters used for measuring reactive power under 1 schedule shall be ratcheted.

History: 1983 AACS; 2008 AACS.

R 460.3606 Nondirect reading meters and meters operating from instrument transformers; marking of multiplier on instruments; marking of charts and magnetic tapes; marking of register ratio on meter registers; watt-hour constants.

Rule 606. (1) Meters that are not direct reading and meters operating from instrument transformers shall have the multiplier plainly marked on the dial of the instrument or otherwise suitably marked. All charts and magnetic tapes taken from recording meters shall be marked with the date of the record, the meter number, customer, and chart multiplier, except as provided in R 460.3304.

(2) The register ratio shall be marked on all meter registers.

(3) The watt-hour constant for the meter itself shall be shown on all watt-hour meters.

History: 1983 AACS.

R 460.3607 Watt-hour meter requirements.

Rule 607. (1) Watt-hour meters that are used for measuring electrical quantities supplied shall conform to ANSI specifications and meet all of the following requirements:

(a) Be of proper design for the circuit on which the meters are used; be in good mechanical and electrical condition; and have adequate insulation, correct internal connections, and correct register.

(b) Not creep at no load with all load wires disconnected at a rate of one complete revolution of the moving element in ten minutes when potential is impressed.

(c) Be accurate to within plus or minus 1.0%, referred to the portable standard watt-hour meter as a base, at two unity power factor loads: light load (l.l.) and heavy load (h.l.).

Meter Must be Accurate within $\pm 1.0\%$ to Portable Standard			
Meter Class	Light Load Test Amperes	Heavy Load Test Amperes	Inductive Load 50% Lagging Power Factor Test Amperes
Self-Contained	10% Rated Test Amperes of Meter	75-100% Rated Test Amperes of Meter	75-100% Rated Test Amperes of Meter
Transformer Rated	5-10% Rated Test Amperes	75-100% Rated	75-100% Rated Test Amperes

	of Meter	Test Amperes of Meter	of Meter
--	----------	-----------------------------	----------

(d) Be accurate to within plus or minus 2.0%, referred to the portable standard watt-hour meter as a base, at inductive load (i.l.).

(2) Polyphase meters shall have their elements in balance within 2.0% at rated test amperes at unity power factor and at approximately 50% lagging power factor.

(3) Meters that are used with instrument transformers shall be adjusted so that the overall accuracy of the metering installation meets the requirements of this rule.

(4) Meters and associated devices shall be adjusted as close as practical to zero error and within the accuracy limits specified in subrule (1)(c) of this rule.

History: 1983 AACS; 2008 AACS.

R 460.3608 Demand meters, registers, and attachments; requirements.

Rule 608. A demand meter, demand register, or demand attachment that is used to measure a customer's service shall meet all of the following requirements:

(a) Be in good mechanical and electrical condition.

(b) Have proper constants, indicating scale, contact device, recording tape or chart, and resetting device.

(c) Not register at no load.

(d) Be accurate to the following degrees:

(i) Curve-drawing meters that record quantity-time curves and integrated-demand meters shall be accurate to within plus or minus 2.0% of full scale throughout their working range. Timing elements measuring specific demand intervals shall be accurate to within plus or minus 2.0%, and the timing element which serves to provide a record of the time of day when the demand occurs shall be accurate to within plus or minus 4 minutes in 24 hours.

(ii) Lagged-demand meters shall be accurate to within plus or minus 4.0% of full scale at final indication.

History: 1983 AACS.

R 460.3609 Instrument transformers used in conjunction with metering equipment; requirements; phase shifting transformers; secondary voltage.

Rule 609. (1) Instrument transformers used in conjunction with metering equipment to measure a customer's service shall meet both of the following requirements:

(a) Be in proper mechanical condition and have satisfactory electrical insulation for the service on which used.

(b) Have characteristics such that the combined inaccuracies of all transformers supplying 1 or more meters in a given installation will not exceed the percentages listed in the following chart:

	100% Power Factor	100%	50% Power Factor	100%
Current	10%	100%	10%	100%
Error	1%	0.75%	3%	2%

(2) Meters that are used in conjunction with instrument transformers shall be adjusted so that the overall accuracies will come within the limits specified in this part.

(3) Instrument transformers shall be tested with the meter with which they are associated by making an overall test or may be checked separately. If the transformers are tested separately, the meters shall also be checked to see that the overall accuracy of the installation is within the prescribed accuracy requirements. (See R 460.3613 (6).)

(4) The results of tests of instrument transformers shall be kept on record and shall be available for use.

(5) Phase shifting transformers shall have secondary voltages under balanced line voltage conditions within plus or minus 1.0% of the voltage impressed on the primary side of the transformer.

History: 1983 AACS; 2008 AACS.

R 460.3610 Portable indicating voltmeters; accuracy.

Rule 610. All portable indicating voltmeters that are used for determining the quality of service voltage to customers shall be checked against a suitable secondary reference standard at least once every 6 months for analog devices, and once every 12 months for digital devices. The accuracy of these voltmeters shall be rated so that the error of the indication is not more than plus or minus 1% of full scale. If the portable indicating voltmeter is found to be in error by more than the rated accuracy at commonly used scale deflections, it shall be adjusted.

History: 1983 AACS; 2008 AACS.

R 460.3611 Meter testing equipment; availability; provision and use of primary standards.

Rule 611. (1) A utility shall maintain sufficient laboratories, meter testing shops, secondary standards, instruments, and facilities to determine the accuracy of all types of meters and measuring devices used by the utility. The utility may, if necessary, have all or part of the required tests made, or its portable testing equipment checked, by another utility or agency which is approved by the commission and which has adequate and sufficient testing equipment to comply with these rules.

(2) At a minimum, a utility shall keep all of the following testing equipment available:

(a) One or more portable standard watt-hour meters that has a capacity and voltage range which is adequate to test all watt-hour meters used by the utility.

(b) Portable indicating instruments that are necessary to determine the accuracy of all instruments used by the utility.

(c) One or more secondary standards to check each of the various types of portable standard watt-hour meters used for testing watt-hour meters. Each secondary standard shall consist of an approved portable standard watt-hour meter which is kept permanently at 1 point and which is not used for fieldwork. Standards shall be well-compensated for both classes of temperature errors, shall be practically free from errors due to ordinary voltage variations, and shall be free from erratic registration due to any cause.

(d) Suitable standards, which are not used for fieldwork, to check portable instruments used in testing.

(3) A utility shall provide and use primary standards that have accuracies which are traceable to the United States National Institute of Standards and Technology (NIST).

History: 1983 AACS; 1995 AACS.

R 460.3612 Test standards; accuracy.

Rule 612. (1) The accuracies of all primary reference standards shall be certified as traceable to the National Institute of Standards and Technology (NIST), either directly or through other recognized standards laboratories. These standards shall have their accuracy certified at the time of purchase. Standard cells shall be intercompared regularly and at least 1 standard cell shall be checked by a standardizing laboratory at intervals of not more than 2 years. Reference standards of resistance, potentiometers, and volt boxes shall be checked at intervals of not more than 3 years.

(2) Secondary watt-hour meter standards shall not be in error by more than plus or minus 0.3% at loads and voltages at which they are to be used, and shall not be used to check or calibrate working standards, unless the secondary standard has been checked and adjusted, if necessary, within the

preceding 6 months. Each secondary standard watt-hour meter shall have calibration data available and shall have a history card.

(3) Secondary standards indicating instruments shall not be in error by more than plus or minus 0.5% of indication at commonly used scale deflection and shall not be used to check or calibrate portable indicating instruments, unless the secondary standard has been checked and adjusted, if necessary, within the preceding 12 months. A calibration record shall be maintained for each standard.

(4) Regularly used working portable standard watt-hour meters shall be compared with a secondary standard at least once every 6 months. Infrequently used working standards shall be compared with a secondary standard before they are used.

(5) Working portable standard watt-hour meters shall be adjusted so that their percent registration is within 99.7% and 100.3% at 100% power factor and within 99.5% and 100.5% at 50% lagging power factor at all voltages and loads at which the standard may be used. A history and calibration record shall be kept for each working standard.

(6) The meter accuracies required in this rule for all primary, secondary, and working standards shall be referred to 100%. Service measuring equipment shall be adjusted to within the accuracies required assuming the portable test equipment to be 100% accurate with the calibration correction taken into consideration.

History: 1983 AACS; 1995 AACS; 2008 AACS.

#### R 460.3613 Metering equipment testing requirements.

Rule 613. (1) The testing of any unit of metering equipment shall consist of a comparison of its accuracy with a standard of known accuracy. Units which are not properly connected or which do not meet the accuracy or other requirements of these meter and metering equipment rules at the time of testing shall be reconnected or rebuilt to meet such requirements and shall be adjusted to within the required accuracy and as close to zero error as practicable or else their use shall be discontinued.

(2) Self-contained, single-phase meters, except for combination meters (meters that include demand devices or control devices), shall be in compliance with all of the following requirements:

(a) Be checked for accuracy at unity power factor at the point where a meter is installed, at a central testing point, or in a mobile testing laboratory within a period of from 12 months before, to 60 days after, a meter is placed in service, except as provided for in R 460.3602, and in subrule (3) of this rule, and not later than 9 months after 192 months of service for a surge-resistant meter and not later than 9 months after 96 months of service for a non-surge-resistant meter.

(b) Notwithstanding the provisions of subdivision (a) of this subrule, upon application to the commission and upon receipt of an order granting approval, the testing of self-contained, single-phase meters in service shall be governed by a quality control plan as follows:

(i) Meters shall be divided into homogeneous groups by manufacturers' types, except as follows:

(A) Certain manufacturers' types shall be further subdivided into separate groups by manufacturers' serial numbers as follows:

(1) General Electric type I-30 shall be divided at serial number 20,241,829.

(2) Westinghouse type C shall be divided at serial number 16,350,000.

(3) Duncan type MF shall be divided at serial number 2,650,000.

(4) Sangamo type J meters shall be divided starting with serial number 10,000,000.

(B) Non-surge-resistant meters that are installed in nonurban areas shall be treated as separate groups by manufacturers' type.

(ii) The meters in each homogeneous group shall then be further subdivided into lots of not less than 301, and not more than 10,000, meters each, except that meters of the most recent design may be combined into lots regardless of manufacturers' type, except that where the number of meters of a single type is 8,001 or more, that number of meters shall be segregated by types for the formation of lots.

(iii) From each assembled lot, a sample of the size specified in table A-2, ANSI/ASQC Z1.9, shall be drawn annually. The sample shall be drawn at random.

(iv) The meters in each sample shall be tested for accuracy pursuant to the provisions of these rules.

(v) The test criteria for acceptance or rejection of each lot shall be based on the test at heavy load only and shall be that designated for double specification limits and an acceptable quality level (AQL) that is not higher than 2.50 (normal inspection) as shown in table B-3, ANSI/ASQC Z1.9.

(vi) The necessary calculations shall be made pursuant to Example B-3 of ANSI/ASQC Z1.9. The upper and lower specification limits, U and L, shall be 102% and 98%, respectively.

(vii) A lot shall be rejected if the total estimated percent defective (p) exceeds the appropriate maximum allowable percent defective (M) as determined from table B-3 as specified in paragraph (v) of this subdivision.

(viii) All meters in a rejected lot shall be tested within a maximum period of 48 months and shall be adjusted pursuant to the provisions of R 460.3607 or shall be replaced with meters that are in compliance with the requirements of R 460.3607.

(ix) During each calendar year, new meter samples shall be drawn as specified in this subdivision from all meters in service, with the exception that lots that have been rejected shall be excluded from the sampling procedure until all meters included in the rejected lots have been tested.

(x) The utility may elect to adopt a mixed variables-attributes sampling plan as outlined in Section A9 of ANSI/ASQC Z1.9, in which case, a lot that is not in compliance with the acceptability criteria of the variables sampling plan shall be resampled the following year using an attributes sampling plan. If the acceptability criteria of the attributes sampling plan are met, then the lot shall be considered acceptable and shall be returned to the variables sampling plan the following year. If the acceptability criteria of the attributes sampling plan are not met, then that lot shall be rejected and all meters in the lot shall be tested and adjusted or replaced within a maximum period of 36 months after the second rejection.

(xi) The plan specified in paragraph (x) of this subdivision does not alter the rules under which customers may request special tests of meters.

(c) Be checked for accuracy in all of the following situations:

(i) When a meter is suspected of being inaccurate or damaged.

(ii) When the accuracy of a meter is questioned by a customer. (See R 460.3601.)

(iii) Before use if a meter has been inactive for more than 1 year after having been in service.

(iv) When a meter has been removed from service and has not been tested within the previous 48 months.

(d) Be inspected for mechanical and electrical faults when the accuracy of the device is checked.

(e) Have the register and the internal connections checked before the meter is first placed in service and when the meter is repaired.

(f) Have the connections to the customer's circuits checked when the meter is tested on the premises or when removed for testing.

(g) Be checked for accuracy at 50% power factor when purchased and after rebuilding.

(h) A meter need not be tested or checked for any reason, except when a complaint is received, if the device was tested, checked, and adjusted, if necessary, within the previous 12 months.

(3) Notwithstanding the provisions of subrules (4)(a)(ii), (5)(a)(ii) and (6)(a)(iii) of this rule, upon application to the commission and upon receipt of an order granting approval, the solid state meters described in subrules (4), (5) and (6) of this rule in service may elect to be governed by a quality control plan as follows:

(a) Meters shall be divided into homogeneous groups by manufacturers' types.

(b) The meters in each homogeneous group shall then be further subdivided into lots of not less than 301, and not more than 10,000, meters each, except that meters of the most recent design may be combined into lots regardless of manufacturers' type, except that where the number of meters of a single type is 8,001 or more, that number of meters shall be segregated by types for the formation of lots.

(c) From each assembled lot, a sample of the size specified in table A-2, ANSI/ASQC Z1.9, shall be drawn annually. The sample shall be drawn at random.

(d) The meters in each sample shall be tested for accuracy pursuant to the provisions of these rules.

(e) The test criteria for acceptance or rejection of each lot shall be based on the test at heavy load only and shall be that designated for double specification limits and an acceptable quality level (AQL) that is not higher than 2.50 (normal inspection) as shown in table B-3, ANSI/ASQC Z1.9.

(f) The necessary calculations shall be made pursuant to Example B-3 of ANSI/ASQC Z1.9. The upper and lower specification limits, U and L, shall be 102% and 98%, respectively.

(g) A lot shall be rejected if the total estimated percent defective (p) exceeds the appropriate maximum allowable percent defective (M) as determined from table B-3 as specified in paragraph (e) of this subdivision.

(h) All meters in a rejected lot shall be tested within a maximum period of 48 months and shall be adjusted pursuant to the provisions of R 460.3607 or shall be replaced with meters that are in compliance with the requirements of R 460.3607.

(i) During each calendar year, new meter samples shall be drawn as specified in this subdivision from all meters in service, with the exception that lots that have been rejected shall be excluded from the sampling procedure until all meters included in the rejected lots have been tested.

(j) The utility may elect to adopt a mixed variables-attributes sampling plan as outlined in Section A9 of ANSI/ASQC Z1.9, in which case, a lot that is not in compliance with the acceptability criteria of the variables sampling plan shall be resampled the following year using an attributes sampling plan. If the acceptability criteria of the attributes sampling plan are met, the lot shall be considered acceptable and shall be returned to the variables sampling plan the following year. If the acceptability criteria of the attributes sampling plan are not met, then that lot shall be rejected and all meters in the lot shall be tested and adjusted or replaced within a maximum period of 36 months after the second rejection.

(k) The plan specified in paragraph (j) of this subdivision does not alter the rules under which customers may request special tests of meters.

(4) All single-phase meters that are not included in the provisions of subrule (2) of this rule, together with associated equipment, such as demand devices, control devices and instrument transformer-rated meters, shall be in compliance with all of the following requirements:

(a) Be checked for accuracy at unity power factor at the point where a meter is installed, at a central testing point, or in a mobile testing laboratory as follows:

(i) Within a period of from 12 months before, to 60 days after, a meter is placed in service, exceptions to this subrule (4)(a) of this rule are as provided for in R 460.3602 and for solid state meters.

(ii) Not later than 9 months after 144 months of service for a surge-resistant meter and not later than 9 months after 96 months of service for a non-surge-resistant meter.

(iii) When a meter is suspected of being inaccurate or damaged.

(iv) When the accuracy of a meter is questioned by a customer. (See R 460.3601.)

(v) Before use when a meter has been inactive for more than 1 year after having been in service.

(vi) When a meter is removed from service and has not been tested within a period equal to 1/2 of the normal test schedule.

(b) Be inspected for mechanical and electrical faults when the accuracy of the device is checked.

(c) Have the register and the internal connections checked before the meter is first placed in service and when the meter is repaired.

(d) Have the connections to the customer's circuits checked when the meter is tested on the premises or when removed for testing.

(e) Be checked for accuracy at 50% power factor when purchased and after rebuilding.

(f) A meter need not be tested or checked for any reason, except when a complaint is received, if the device was tested, checked and adjusted, if necessary, within the previous 12 months.

(5) All self-contained, 3-phase meters and associated equipment shall be in compliance with all of the following requirements:

(a) Be tested for accuracy at unity and 50% power factor as follows:

(i) Before being placed in service.

(ii) Not later than 96 months after 120 months of service.

(iii) When a meter is suspected of being inaccurate or damaged.

(iv) When the accuracy of a meter is questioned by a customer. (See R 460.3601.)

(v) When a meter is removed from service.

(b) Be inspected for mechanical and electrical faults when the accuracy is checked.

(c) Have the register and internal connections checked before the meter is first installed, when repaired and when the register is changed.

(d) Have the connections to the customer's circuits and multipliers checked when the equipment is tested for accuracy on the customer's premises.

(6) All transformer-rated, 3-phase meters and associated equipment shall be in compliance with all of the following requirements:

(a) Be checked for accuracy at unity and 50% power factor as follows:

(i) Before being placed in service.

(ii) On the customer's premises within 60 days after installation, unless the transformers are in compliance with the specifications outlined in the American National Standards Institute standard ANSI C-57.13, and unless the meter adjustment limits do not exceed plus or minus 1.5% at 50% power factor.

(iii) Not later than 9 months after 72 months of service.

(iv) When a meter is suspected of being inaccurate or damaged.

(v) When the accuracy is questioned by a customer. (See R 460.3601.)

(vi) When a meter is removed from service.

(b) Be inspected for mechanical and electrical faults when the accuracy is checked.

(c) Have the register and internal connections checked before the meter is first placed in service and when the meter is repaired.

(d) Have the connections to the customer's circuits and multipliers checked when the equipment is tested for accuracy on the premises or when removed for testing and when instrument transformers are changed.

(e) Be checked for accuracy at 50% power factor when purchased and after rebuilding.

(7) Instrument transformers shall be tested in all of the following situations:

(a) When first received, unless a transformer is accompanied by a certified test report by the manufacturer.

(b) When removed from service.

(c) Upon complaint.

(d) When there is evidence of damage.

(e) When an approved check, such as the variable burden method in the case of current transformers that is made when the meter is tested indicates that a quantitative test is required.

(8) Demand meters shall be in compliance with both of the following requirements:

(a) Be tested for accuracy in all of the following situations:

(i) Before a meter is placed in service.

(ii) When an associated meter is tested and the demand meter is a block interval nonrecording type or a thermal type.

(iii) After 2 years of service if the meter is of the recording type, but testing is not required if the meter is of the pulse-operated type and the demand reading is checked with the kilowatt-hour reading each billing cycle.

(iv) When a meter is suspected of being inaccurate or damaged.

(v) When the accuracy is questioned by a customer. (See R 460.3601.)

(vi) When a meter is removed from service.

(b) Be inspected for mechanical and electrical faults when a meter is tested in the field or in the meter shop.

History: 1983 AACS; 1995 AACS; 2008 AACS.

R 460.3614 Standards check by the commission.

Rule 614. (1) Upon request of the commission, a utility shall submit 1 of its portable standard watt-hour meters and 1 portable indicating voltmeter, ammeter, and wattmeter to a commission-approved standards laboratory for checking of their accuracy.

(2) A utility shall normally check its own working portable standard watt-hour meters or instruments against primary or secondary standards and shall calibrate these working standards or instruments before they are submitted with a record of such calibration attached to each of the working standards or instruments.

History: 1983 AACS.

R 460.3615 Metering equipment records.

Rule 615. (1) A complete record of the most recent test of all metering equipment shall be maintained. The record shall show all of the following information:

(a) Identification and location of unit.

(b) Equipment with which the device is associated.

- (c) The date of test.
- (d) Reason for the test.
- (e) Readings before and after the test.
- (f) A statement as to whether or not the meter creeps and, in case of creeping, the rate.
- (g) A statement of meter accuracies before and after adjustment sufficiently complete to permit checking of the calculations employed.
- (h) Indications showing that all required checks have been made.
- (i) A statement of repairs made, if any.
- (j) Identification of the testing standard and the person making the test.
- (2) The utility shall also keep a record of each unit of metering equipment which shows all of the following information:
  - (a) When the unit was purchased.
  - (b) The unit's cost.
  - (c) The company's identification.
  - (d) Associated equipment.
  - (e) Essential nameplate date.
  - (f) The date of the last test. The record shall also show either the present service location with the date of installation or, if removed from service, the service location from which the unit was removed with the date or removal.

History: 1983 AACS.

R 460.3616 Average meter error; determination.

Rule 616. If a metering installation is found upon any test to be in error by more than 2% at any test load, the average error shall be determined in 1 of the following ways:

(a) If the metering installation is used to measure a load which has practically constant characteristics, such as a streetlighting load, the meter shall be tested under similar conditions of load and the accuracy of the meter "as found" shall be considered as the average accuracy.

(b) If a single-phase metering installation is used on a varying load, the average error shall be the weighted algebraic average of the error at light load and the error at heavy load, the latter being given a weighting of 4 times the former.

(c) If a polyphase metering installation is used on a varying load, the average error shall be the weighted algebraic average of its error at light load given a weighting of 1, its error at heavy load and 100% power factor given a weighting of 4, and at heavy load and 50% lagging powerfactor given a weighting of 2.

(d) If a load, other than the light, heavy, and low power factor load specified for routine testing, is more representative of the customary use of the metering equipment, its error at that load shall also be determined. In this case, the average error shall be computed by giving the error at such load and power factor a weighting of 3 and each of the errors at the other loads (light, heavy, and 50% lagging power factor) a weighting of 1. Each error shall be assigned its proper sign.

History: 1983 AACS.

R 460.3617 Reports to be filed with the commission.

Rule 617. (1) A utility shall file, with the commission, within 30 days after the first day of January of each year, an officer-certified statement that the utility has complied with all of the requirements set forth in these rules relating to meter standardizing equipment.

(2) For all meters that are not included in the provisions of R 460.3613(2)(b), the utility shall file, with the commission, on or before the first day of April of each year, its annual tabulation of all of its prior-to-adjustment meter test results covering the 12-month period ending December 31. The utility shall summarize, by meter type, all individual meters and overall light and heavy load prior-to-adjustment test results at the power factors required by these rules. The summary shall be divided into heavy load 100% power factor, light load 100% power factor, and heavy load 50% power factor test results and shall also be divided according to the length of meter test period and types of single-

phase and polyphase meters. The summary shall show the number of meters or overall tests found within each of the following accuracy classifications:

- (a) No recording.
- (b) Creeping.
- (c) Equal to or less than 94.0%.
- (d) 94.1 to 96.0%.
- (e) 96.1 to 97.0%.
- (f) 97.1 to 98.0%.
- (g) 98.1 to 99.0%.
- (h) 99.1 to 100.0%.
- (i) 100.1 to 101.0%.
- (j) 101.1 to 102.0%.
- (k) 102.1 to 103.0%.
- (l) 103.1 to 104.0%.
- (m) 104.1 to 106.0%.
- (n) Over 106.0%.

When a utility is subject to multiple state jurisdiction, these accuracy classifications may be modified with the approval of the commission.

(3) For all meters that are included in the provisions of R 460.3613(2)(b), the utility shall file, with the commission, on or before the first day of April, all of the following information:

(a) A summary of all samples of meter lots that pass the acceptability criteria as set forth in ANSI/ASQC Z1.9-1980, including complete data on all of the following:

- (i) The type of meter.
- (ii) The number of meters in a lot.
- (iii) The size of the sample.
- (iv) The average months in service since the last test.
- (v) The computed p (total estimated percent defective in lot).
- (vi) The corresponding M (maximum allowable percent defective) as determined from table B-3 in ANSI/ASQC Z1.9-1980.

(b) The necessary calculations made pursuant to Example B-3 of ANSI/ASQC Z1.9-1980 shall be retained for each sample or resample drawn. In addition to the actual computation, the data shall include all of the following:

- (i) The type of meter.
- (ii) The number of meters in the lot.
- (iii) The meter numbers of sample meters.
- (iv) The actual prior-to-adjustment test data of each meter tested.
- (v) The number of months since the last test for each meter in the sample.

A sample of the calculations and data for a lot that passes the acceptability criteria shall be included in the report to the commission.

(c) A copy of the complete data, as outlined in this subrule, shall be included for each meter lot that is not in compliance with the acceptability criteria of the sampling plan employed as set forth in ANSI/ASQC Z1.9-1980.

(d) A report summarizing the testing of all meters in rejected lots that are to be returned to service. The heavy load preadjustment tests only shall be recorded, and the accuracy classifications as established in subrule (2) of this rule shall be used. Each rejected lot shall be reported separately and shall be separated into groups by the number of months since the last test as follows:

- (i) 0 to 48 months.
- (ii) 49 to 72 months.
- (iii) 73 to 96 months.
- (iv) More than 96 months.

History: 1983 AACS; 1995 AACS.

R 460.3618 Generating and interchange station meter tests; schedule; accuracy limits.

Rule 618. (1) Generating and interchange station and watt-hour meters shall be tested in conjunction with their associated equipment as follows:

(a) At least once every 24 months for generating station meters.

(b) At least once every 12 months for interchange meters.

(2) The accuracy limits for any particular device shall not be greater than the accuracy limits required elsewhere in these rules.

History: 1983 AACS.

## PART 7. STANDARDS OF QUALITY OF SERVICES

R 460.3701 Alternating current systems; standard frequency.

Rule 701. The standard frequency for alternating current systems shall be 60 hertz. The frequency shall be maintained within limits that will permit the satisfactory operation of customers' clocks which are connected to the system.

History: 1983 AACS; 1996 AACS.

R 460.3702 Standard nominal service voltage; limits; exceptions.

Rule 702. (1) Each utility shall adopt and submit standard nominal service voltages.

(2) With respect to secondary voltages, the following provisions shall apply:

(a) For all retail service, the variations of voltage shall be not more than 5% above or below the standard nominal voltage as submitted pursuant to subrule (1) of this rule, except as noted in subrule (4) of this rule.

(b) Where 3-phase service is provided, the utility shall exercise reasonable care to ensure that the phase voltages are balanced within practical tolerances.

(3) With respect to primary voltages, the following provisions shall apply:

(a) For service rendered principally for industrial or power purposes, the voltage variation shall not be more than 5% above or below the standard nominal voltages as submitted pursuant to subrule (1) of this rule, except as noted in subrule (4) of this rule.

(b) The limitations in subdivision (a) of this subrule do not apply to special contracts in which the customer specifically agrees to accept service with unregulated voltage.

(4) Voltages outside the limits specified in this rule shall not be considered a violation if the variations are infrequent fluctuations or occur from adverse weather conditions, service interruptions, causes beyond the control of the utility, or voltage reductions that are required to reduce system load at times of supply deficiency or loss of supply.

History: 1983 AACS; 1996 AACS.

R 460.3703 Voltage measurements and records.

Rule 703. (1) Voltage measurements shall be made at the utility's service terminals.

(2) Each utility shall make a sufficient number of voltage measurements, using recording voltmeters, to determine if voltages are in compliance with the requirements stated in R 460.3702.

(3) All records obtained under subrule (2) of this rule shall be retained by the utility for not less than 2 years and shall be available for inspection by the commission's representatives. The records shall indicate all of the following information:

(a) The location where the voltage was measured.

(b) The time and date of the measurement.

(c) The results of the comparison with an indicating voltmeter at the time a recording meter is set.

History: 1983 AACS; 1996 AACS.

R 460.3704 Voltage measurements; required equipment; periodic checks; certificate or calibration card for standards.

Rule 704. (1) Each utility shall have access to at least 1 indicating voltmeter that has a stated accuracy within 0.25% of full scale. The instrument shall be maintained within its stated accuracy.

(2) Each utility shall have not less than 2 indicating voltmeters that have a stated accuracy within 1.0% of full scale.

(3) Each utility shall have not less than 2 portable recording voltmeters, or their electronic equivalent, with a stated accuracy within 1.5% of full scale.

(4) Standards shall be checked in accordance with R 460.3612.

(5) Working instruments shall be checked in accordance with R 460.3610.

(6) Each standard shall be accompanied at all times by a certificate or calibration card, duly signed and dated, on which the corrections required to compensate for errors found at the customary test points at the time of the last test are recorded.

History: 1983 AACS; 1996 AACS.

R 460.3705 Interruptions of service; records; planned interruption; notice to commission.

Rule 705. (1) Each utility shall make a reasonable effort to avoid interruptions of service. When interruptions occur, service shall be restored within the shortest time practical, consistent with safety.

(2) Each utility shall keep records of sustained interruptions of service to its customers and shall make an analysis of the records for the purpose of determining steps to be taken to prevent recurrence of the interruptions. The records shall include the following information concerning the interruptions:

(a) Cause.

(b) Date and time.

(c) Duration.

(3) Planned interruptions shall be made at a time that will not cause unreasonable inconvenience to customers and shall be preceded, if feasible, by adequate notice to persons who will be affected.

(4) Each utility shall promptly notify the commission of any major interruption of service to its customers.

History: 1983 AACS; 1996 AACS.

## PART 8. SAFETY

R 460.3801 Protective measures.

Rule 801. Each utility shall exercise reasonable care to reduce the hazards to which its employees, its customers, and the general public may be subjected.

History: 1983 AACS.

R 460.3802 Safety program.

Rule 802. Each utility shall comply with the provisions of the occupational safety and health act, 29 U.S.C. S651 et seq., and Act No.154 of the Public Acts of 1974, as amended, being S408.1001 et seq. of the Michigan Compiled Laws, and known as the Michigan occupational safety and health act, and shall operate under applicable federal and state health and safety laws and regulations.

History: 1983 AACS; 1996 AACS.

R 460.3803 Energizing services.

Rule 803. When energizing services, each utility shall comply with the provisions of all applicable codes and statutory requirements, unless otherwise specified by the commission. The utility may refuse to energize a service if an unsafe condition is observed.

History: 1983 AACCS; 1996 AAC.

R 460.3804 Accidents; notice to commission.

Rule 804. Each utility shall promptly notify the commission of fatalities and serious injuries that are substantially related to the facilities or operations of the facilities.

History: 1996 AACCS.

R 460.3901 Rescinded.

History: 1983 AACCS; 1989 AACCS; 1996 AACCS.

R 460.3902 Rescinded.

History: 1983 AACCS; 1996 AACCS.

R 460.3903 Rescinded.

History: 1983 AACCS; 1996 AACCS.

R 460.3904 Rescinded.

History: 1983 AACCS; 1996 AACCS.

R 460.3905 Rescinded.

History: 1983 AACCS; 1996 AACCS.

R 460.3906 Rescinded.

History: 1983 AACCS; 1996 AACCS.

R 460.3907 Rescinded.

History: 1996 AACCS.

R 460.3908 Rescinded.

History: 1996 AACs.

# Energy Systems- Draft Zoning Ordinance Amendments

## Definitions.

**Battery Energy Storage System, Large Utility Scale:** A battery Energy storage system (BESS) that is principal use (or co-located with a second principal use) and that is designed and built to connect to the transmission grid with nameplate capacity of 50 megawatts or more and an energy discharge capability of 200 megawatt hours or more.

**Non-Participating Property:** Any property that is adjacent to a participating property.

**Participating Property:** A battery energy storage system host property or any real property that is the subject of an agreement that provides for the payment of monetary compensation to the landowner from system owner (or affiliate) regardless of whatever any part of a system is constructed on the property.

## Intent.

The purpose of this Section is to establish minimum requirements and regulations for the construction, erection, placement, location, maintenance, modification, operation, and decommissioning of utility use Energy Systems in the \_\_\_\_\_ in a manner that promotes economic development and ensures the protection of health, safety and welfare while also avoiding adverse impacts to important areas such as agricultural lands, residential areas, endangered habitats, conservation lands, and other sensitive lands.

## Utility Scale Energy Systems.

All Large Utility Scale Battery Energy Storage Systems (BESS) shall comply with all requirements in [insert state reference]. In addition to all of the State requirements, the following requirements shall apply to Large Utility Scale, Battery Energy Storage Systems:

- A. **Size:** The minimum lot size shall be fifty (50) acres.
- B. **Setbacks:** The following minimum setback requirements as measured from the nearest facility structure shall be:

<i>Setback Description</i>	<i>Setback Distance</i>
Occupied building and dwellings on nonparticipating properties.	650 feet from the nearest point on the outer wall
Public road right-of-way	100 feet measured from the nearest edge of a public road right-of-way

- C. **Height.**
  - 1. **Battery Energy Storage System.** The height of battery energy storage system structures, except for electric distribution and transmission poles, shall not exceed a height of 20 feet.
- D. **Fencing.** The system shall be completely enclosed with fencing in compliance with the latest version of the National Electrical Safety Code or any applicable successor standard approved by the Michigan Public Service Commission. Fencing shall be 8 feet high with 2 rows of wire and sound barrier deadening liner.

- E. **Sound.** The sound pressure level of a BESS shall not exceed a noise level of 45 OBA (Leq (1-hour)) OR average hourly decibels as modeled at the property line of an adjacent nonparticipating property. Decibel modeling shall use A- weighted scale as designed by the American National Standards Institute. The sound level limits apply to the contribution from the BESS only and do not include contributions from background ambient sounds. The site plan shall include modeled sound isolines extending from the sound source(s) to the property lines or dwellings located on adjacent nonparticipating property to demonstrate compliance with this standard.
1. **Post-construction sound survey:** Documentation of sound pressure level measurements shall be provided to the Zoning Administrator by a third-party qualified professional selected by the Planning Commission and at the expense of the BESS system owner within 12 months of the commencement of the operation of the project. The study will be designed to verify compliance with sound standards applicable to this ordinance. The energy facility does not generate a maximum sound in excess of 45 average hourly decibels as modeled at the nearest outer wall of the nearest dwelling located on an adjacent nonparticipating property. Decibel modeling shall use the A-weighted scale as designed by the American National Standards Institute.
- F. **Lighting.** The system must implement dark sky-friendly lighting solutions and satisfy the provisions of Section \_\_\_\_ -
- G. **Host Community Agreement.** The applicant shall enter into a host community agreement with the \_\_\_\_\_. The host community agreement shall require that, upon commencement of any operation, the Utility-Scale Battery Energy Storage System owner must pay the \_\_\_\_\_ \$2000.00 per megawatt of nameplate capacity. The payment shall be used as determined by the \_\_\_\_\_ for police, fire, public safety, or other infrastructure, or for other projects as agreed to by the local unit and the applicant.
- H. **Safety Signage.** The system shall post signs in compliance with NFPA 70/70E or any applicable successor code in place at the time of application for approval. Additionally, signage shall be provided per NFPA 855 7.4.4, or any applicable successor code in place at the time of application for approval, including information on the system type and technology, special hazards, for suppression system and 24-hour emergency contact information, including reach-back phone number. A clearly visible warning sign concerning voltage shall be placed at the base of all pad-mounted transformers and substations. The system must generate a 911 call for the local Fire Department.
- I. **Fire Protection:** The facility shall comply with NFPA 855 "Standard for the Installation of Stationary Energy Storage Systems" or any applicable successor standard adopted by the Michigan Public Service Commission.
- J. **Landscaping:** The Planning Commission may require reasonable measures to minimize visual impacts by preserving existing natural vegetation, requiring new vegetation screening or other appropriate measures. The Planning Commission shall determine such visual screening measures as may be required, if any, on-site specific basis pursuant to the standards for special land use approval as specified in this Ordinance, the landscaping standards of section \_\_\_\_, and/or the standards for the site plan approval as specified this Ordinance, as most applicable to the circumstances. In making this determination the Planning Commission is specifically authorized to consider whether additional visual screening measures are appropriate where a system is proposed to be located on property adjoining a Residential District.

- K. Access Drive: If the system includes an access drive(s) for maintenance purposes, the surface of the access drive(s) shall be permeable unless on brownfield land, or on an already paved surface at the time of application for approval such as a parking lot or former building foundation. The access drive(s) shall be wide enough to accommodate two-way fire truck traffic.
- L. Fire Hydrant Well: The developer shall install 350-500gal (10-inch casing) fire hydrant well on-site, to be shown on the site plan.
- M. Surfacing: Except as otherwise depicted on the site plan and subject to approval of the Planning Commission, the area within which the system is located shall not be paved with asphalt or concrete or any other surface material that is impermeable to water other than for slab foundations for structures and equipment. This shall not apply to a system located on brownfields land or on an existing paved area such as a former building slab or in an unused parking area when adequate parking remains for any other use on the site. The access road must allow two-way traffic for emergency vehicles.
- N. Surface Water Runoff: All surface water runoff shall be effectively managed on-site pursuant to Section \_\_\_ of this Ordinance.
- O. Installation and Operational Safety. The system shall comply with all the following requirements:
1. The system shall be designed and constructed for the interconnection to a Michigan Public Service Commission or Midcontinent Independent System Operator regulated utility electrical power grid and shall be operated with such interconnection.
  2. The system and all foundation elements shall comply with all applicable building and electrical code requirements, and any applicable federal/state regulations. The manufacturer's engineer or another qualified engineer shall provide written certification that the design, installation (including foundations), and interconnection is compliant with the manufacturer and industry standards, all applicable local construction and electrical codes, and any applicable federal/state regulations.
  3. Other than transmission or distribution lines for interconnection to the electric power grid, all electrical wiring shall be buried underground; except where the manufacturer's engineer or a qualified engineer employed by the utility that owns/operates the electrical grid to which the system shall be interconnected certifies an underground wiring installation is not permitted by an applicable code and/or applicable federal/state regulation, with attached complete documentation supporting any such certification.
  4. The system shall be designed, located, and maintained so as to comply with all applicable codes and regulations.
- P. Repair and Augmentation. In addition to repairing or pre-placing facility components to maintain the system, the facility may at any time be augmented without the need to submit a new site plan so long as the augmentation is within the same footprint (e.g. same dedicated use building or on footings/foundations in the same location) as the original permit. In the instance of a battery energy storage system, if there is a change in the battery chemistry, an updated Hazard Mitigation Analysis and

Emergency Operation Plan shall be provided. When a facility is anticipated to be augmented over its lifetime by adding additional components, the applicant should apply for the final/augmented site arrangement. A proposal to increase the size of the project footprint may be considered a new application, subject to the ordinance standards at the time of the request.

- Q. Decommissioning and Removal. The system shall comply with all the following requirements:
1. A decommissioning plan, including a Memorandum of Decommissioning in a form recordable at the County Register of Deeds, shall be provided and shall address the following:
    - a. State the anticipated life of the project;
    - b. Describe estimated decommissioning costs in current dollars and provide that this figure will be updated every fifth (5<sup>th</sup>) year after commercial operation of the system;
    - c. Be signed by the party responsible for decommissioning;
    - d. Define the conditions upon which decommissioning will be initiated (e.g.; end of land lease, no power generation/storage for 12 months, etc.);
    - e. State that all equipment, conduit, structures, fencing, roads, and foundations will be removed to a depth of three feet by the end of the decommissioning period;
    - f. Require property to be restored as near as reasonably possible to the condition it was in prior to the development of the system;
    - g. Describe the timeframe for completion of decommissioning activities;
    - h. Describe any agreement (e.g., lease) with the landowner regarding decommissioning;
    - i. State the party currently responsible for decommissioning; and
    - j. Describe any plans or circumstances requiring an update of the decommissioning plan.
  2. A recorded copy of the memorandum of Decommissioning plan shall be submitted to the .....
  3. Decommissioning shall be completed within 12 months of determination by the Zoning Administrator that the system is no longer being maintained in an operable state of good repair, unless the current responsible party with ownership interest in the system provides substantial evidence to the Planning Commission of the intent to maintain and reinstate operation of the system.
  4. The Decommission Plan shall include but is not limited to financial assurance in the form of a bond, a parent company guarantee, or an irrevocable letter of credit, but excluding cash. The amount of the financial assurance shall not be less than the estimated cost of decommissioning the system, after deducting salvage value, as calculated by a third party with expertise in decommissioning, hired by the applicant. However, the financial assurance may be posted in increments as follows:
    - a. At least 25% by the start of full commercial operation.

- b. At least 50% by the start of the fifth year of commercial operation.
- c. 100% by the start of the tenth year of commercial operation the security shall be continuously maintained for the period of the life of the system.

R. Special Land Use Permit and Site Plan Application Requirements. Application for special land use permit approval shall comply with this Ordinance.

## **ENERGY STORAGE FACILITIES**

### **1. Definitions.**

Energy storage facility means a system that absorbs, stores, and discharges electricity with a nameplate capacity of 50 megawatts or more and an energy discharge capacity of 200 megawatt hours or more. Energy storage facility does not include either of the following:

- i. Fossil fuel storage.
- ii. Power-to-gas storage that directly uses fossil fuel inputs.

Nameplate capacity means the designed full-load sustained generating output of an energy facility. Nameplate capacity shall be determined by reference to the sustained output of an energy facility even if components of the energy facility are located on different parcels, whether contiguous or noncontiguous.

2. An energy storage facility may be located and permitted only if all of the following standards are complied with:

A. **Special Land Use - Planning Commission Review:** Energy storage facilities may be permitted subject to a special use permit in the \_\_\_\_\_ Zoning Districts.

B. **Setbacks:** The following minimum setback requirements, with setback distances measured from the nearest edge of the perimeter fencing of the facility:

- a. Occupied community buildings and dwellings on adjacent properties: 300' from the nearest point on the outer wall.
- b. Public road right-of-way: 50' measured from the nearest edge of a public road right of-way.
- c. Nonparticipating parcels: 50' measured from the nearest shared property line.

C. **Compliance:** The energy storage facility shall comply with the version of NFPA 855 "Standard for the Installation of Stationary Energy Storage Systems" in effect on November 29, 2024 or any applicable successor standard adopted by the Michigan Public Service Commission as provided for in MCL 460.1226(8)(c)(ii).

D. **Noise:** The energy storage facility does not generate a maximum sound in excess of 55 average hourly decibels as modeled at the nearest outer wall of the nearest dwelling located on an adjacent nonparticipating property. Decibel modeling shall use the A-weighted scale as designed by the American National Standards Institute.

E. **Lighting:** The energy storage facility will implement dark sky-friendly lighting solutions.

F. **Requirements:** The energy storage facility will comply with any more stringent requirements adopted by the Michigan Public Service Commission as provided in MCL 460.1226(8)(c)(v).

G. **Landscaping:** Existing natural land forms on the site which effectively screen the energy

storage facility from adjacent property used for residential purposes shall be preserved to the maximum extent possible.

H. Minimum Lot Size: energy storage facilities shall only be located on lots which are at least twenty (20) acres in size. Adjacent parcels under the same ownership or which are leased by the owner of the energy storage facility may be considered in combination to satisfy the minimum lot size. However, the lots considered in combination shall not thereafter be separated throughout the life of the energy storage facility. Each energy storage facility is permitted as a use authorized by special use permit which review will consider its compatibility with the surrounding area.

I. Abandonment: If an energy storage facility owner or operator intends to abandon and, in fact, does abandon a facility by not operating it for a period of six (6) months, the energy storage facility shall be deemed to be abandoned. The applicant/permit holder will be so notified in writing by the \_\_\_\_\_ and requested to dismantle the site and return it to its original state. If there are mitigating circumstances as to why the site has not been used, the applicant/permit holder may contact the \_\_\_\_\_ and request a six (6) month extension. If a site has been deemed abandoned and no request for an extension is received, the applicant/permit holder will again be notified to dismantle the site and return it to its original state. If the applicant/permit holder does not do this, the \_\_\_\_\_ will have the removal and restoration done at the owner/applicant's expense.

J. Decommissioning Plan: A decommissioning plan is required at the time of special use permit application. The decommissioning plan shall include:

A. The anticipated manner in which the project will be decommissioned, including a description of which above-grade and below-grade improvements will be removed, retained (e.g. access drive, fencing), or restored for viable reuse of the property consistent with the zoning district.

B. The projected decommissioning costs for removal of the energy storage facility (net of salvage value in current dollars) and soil stabilization.

C. The method of ensuring that funds will be available for site decommissioning and stabilization (performance guarantee in the form of surety bond, irrevocable letter of credit, or cash deposit).



# Energy Systems- Draft Zoning Ordinance Amendments

## Definitions.

**Battery Energy Storage System, Large Utility Scale:** A battery Energy storage system (BESS) that is principal use (or co-located with a second principal use) and that is designed and built to connect to the transmission grid with nameplate capacity of 50 megawatts or more and an energy discharge capability of 200 megawatt hours or more.

**Non-Participating Property:** Any property that is adjacent to a participating property.

**Participating Property:** A battery energy storage system host property or any real property that is the subject of an agreement that provides for the payment of monetary compensation to the landowner from system owner (or affiliate) regardless of whatever any part of a system is constructed on the property.

## Intent.

The purpose of this Section is to establish minimum requirements and regulations for the construction, erection, placement, location, maintenance, modification, operation, and decommissioning of utility use Energy Systems in the \_\_\_\_\_ in a manner that promotes economic development and ensures the protection of health, safety and welfare while also avoiding adverse impacts to important areas such as agricultural lands, residential areas, endangered habitats, conservation lands, and other sensitive lands.

## Utility Scale Energy Systems.

All Large Utility Scale Battery Energy Storage Systems (BESS) shall comply with all requirements in [insert state reference]. In addition to all of the State requirements, the following requirements shall apply to Large Utility Scale, Battery Energy Storage Systems:

- A. **Size:** The minimum lot size shall be fifty (50) acres.
- B. **Setbacks:** The following minimum setback requirements as measured from the nearest facility structure shall be:

<i>Setback Description</i>	<i>Setback Distance</i>
Occupied building and dwellings on nonparticipating properties.	650 feet from the nearest point on the outer wall
Public road right-of-way	100 feet measured from the nearest edge of a public road right-of-way

- C. **Height:**
  - 1. **Battery Energy Storage System.** The height of battery energy storage system structures, except for electric distribution and transmission poles, shall not exceed a height of 20 feet.
- D. **Fencing.** The system shall be completely enclosed with fencing in compliance with the latest version of the National Electrical Safety Code or any applicable successor standard approved by the Michigan Public Service Commission. Fencing shall be 8 feet high with 2 rows of wire and sound barrier deadening liner.

- E. **Sound.** The sound pressure level of a BESS shall not exceed a noise level of 45 OBA (Leq (1-hour)) OR average hourly decibels as modeled at the property line of an adjacent nonparticipating property. Decibel modeling shall use A- weighted scale as designed by the American National Standards Institute. The sound level limits apply to the contribution from the BESS only and do not include contributions from background ambient sounds. The site plan shall include modeled sound isolines extending from the sound source(s) to the property lines or dwellings located on adjacent nonparticipating property to demonstrate compliance with this standard.
1. Post-construction sound survey: Documentation of sound pressure level measurements shall be provided to the Zoning Administrator by a third-party qualified professional selected by the Planning Commission and at the expense of the BESS system owner within 12 months of the commencement of the operation of the project. The study will be designed to verify compliance with sound standards applicable to this ordinance. The energy facility does not generate a maximum sound in excess of 45 average hourly decibels as modeled at the nearest outer wall of the nearest dwelling located on an adjacent nonparticipating property. Decibel modeling shall use the A-weighted scale as designed by the American National Standards Institute.
- F. **Lighting.** The system must implement dark sky-friendly lighting solutions and satisfy the provisions of Section \_\_\_\_\_
- G. **Host Community Agreement.** The applicant shall enter into a host community agreement with the \_\_\_\_\_. The host community agreement shall require that, upon commencement of any operation, the Utility-Scale Battery Energy Storage System owner must pay the \_\_\_\_\_ \$2000.00 per megawatt of nameplate capacity. The payment shall be used as determined by the \_\_\_\_\_ for police, fire, public safety, or other infrastructure, or for other projects as agreed to by the local unit and the applicant.
- H. **Safety Signage.** The system shall post signs in compliance with NFPA 70/70E or any applicable successor code in place at the time of application for approval. Additionally, signage shall be provided per NFPA 855 7.4.4, or any applicable successor code in place at the time of application for approval, including information on the system type and technology, special hazards, for suppression system and 24-hour emergency contact information, including reach-back phone number. A clearly visible warning sign concerning voltage shall be placed at the base of all pad-mounted transformers and substations. The system must generate a 911 call for the local Fire Department.
- I. **Fire Protection:** The facility shall comply with NFPA 855 "Standard for the Installation of Stationary Energy Storage Systems" or any applicable successor standard adopted by the Michigan Public Service Commission.
- J. **Landscaping:** The Planning Commission may require reasonable measures to minimize visual impacts by preserving existing natural vegetation, requiring new vegetation screening or other appropriate measures. The Planning Commission shall determine such visual screening measures as may be required, if any, on-site specific basis pursuant to the standards for special land use approval as specified in this Ordinance, the landscaping standards of section \_\_\_\_\_, and/or the standards for the site plan approval as specified this Ordinance, as most applicable to the circumstances. In making this determination the Planning Commission is specifically authorized to consider whether additional visual screening measures are appropriate where a system is proposed to be located on property adjoining a Residential District.

- K. **Access Drive**: If the system includes an access drive(s) for maintenance purposes, the surface of the access drive(s) shall be permeable unless on brownfield land, or on an already paved surface at the time of application for approval such as a parking lot or former building foundation. The access drive(s) shall be wide enough to accommodate two-way fire truck traffic.
- L. **Fire Hydrant Well**: The developer shall install 350-500gal (10-inch casing) fire hydrant well on-site, to be shown on the site plan.
- M. **Surfacing**: Except as otherwise depicted on the site plan and subject to approval of the Planning Commission, the area within which the system is located shall not be paved with asphalt or concrete or any other surface material that is impermeable to water other than for slab foundations for structures and equipment. This shall not apply to a system located on brownfields land or on an existing paved area such as a former building slab or in an unused parking area when adequate parking remains for any other use on the site. The access road must allow two-way traffic for emergency vehicles.
- N. **Surface Water Runoff**: All surface water runoff shall be effectively managed on-site pursuant to Section \_\_\_ of this Ordinance.
- O. **Installation and Operational Safety**. The system shall comply with all the following requirements:
1. The system shall be designed and constructed for the interconnection to a Michigan Public Service Commission or Midcontinent Independent System Operator regulated utility electrical power grid and shall be operated with such interconnection.
  2. The system and all foundation elements shall comply with all applicable building and electrical code requirements, and any applicable federal/state regulations. The manufacturer's engineer or another qualified engineer shall provide written certification that the design, installation (including foundations), and interconnection is compliant with the manufacturer and industry standards, all applicable local construction and electrical codes, and any applicable federal/state regulations.
  3. Other than transmission or distribution lines for interconnection to the electric power grid, all electrical wiring shall be buried underground; except where the manufacturer's engineer or a qualified engineer employed by the utility that owns/operates the electrical grid to which the system shall be interconnected certifies an underground wiring installation is not permitted by an applicable code and/or applicable federal/state regulation, with attached complete documentation supporting any such certification.
  4. The system shall be designed, located, and maintained so as to comply with all applicable codes and regulations.
- P. **Repair and Augmentation**. In addition to repairing or pre-placing facility components to maintain the system, the facility may at any time be augmented without the need to submit a new site plan so long as the augmentation is within the same footprint (e.g. same dedicated use building or on footings/foundations in the same location) as the original permit. In the instance of a battery energy storage system, if there is a change in the battery chemistry, an updated Hazard Mitigation Analysis and

Emergency Operation Plan shall be provided. When a facility is anticipated to be augmented over its lifetime by adding additional components, the applicant should apply for the final/augmented site arrangement. A proposal to increase the size of the project footprint may be considered a new application, subject to the ordinance standards at the time of the request.

**Q. Decommissioning and Removal.** The system shall comply with all the following requirements:

1. A decommissioning plan, including a Memorandum of Decommissioning in a form recordable at the County Register of Deeds, shall be provided and shall address the following:
  - a. State the anticipated life of the project;
  - b. Describe estimated decommissioning costs in current dollars and provide that this figure will be updated every fifth (5<sup>th</sup>) year after commercial operation of the system;
  - c. Be signed by the party responsible for decommissioning;
  - d. Define the conditions upon which decommissioning will be initiated (e.g.; end of land lease, no power generation/storage for 12 months, etc.);
  - e. State that all equipment, conduit, structures, fencing, roads, and foundations will be removed to a depth of three feet by the end of the decommissioning period;
  - f. Require property to be restored as near as reasonably possible to the condition it was in prior to the development of the system;
  - g. Describe the timeframe for completion of decommissioning activities;
  - h. Describe any agreement (e.g., lease) with the landowner regarding decommissioning;
  - i. State the party currently responsible for decommissioning; and
  - j. Describe any plans or circumstances requiring an update of the decommissioning plan.
2. A recorded copy of the memorandum of Decommissioning plan shall be submitted to the .....
3. Decommissioning shall be completed within 12 months of determination by the Zoning Administrator that the system is no longer being maintained in an operable state of good repair, unless the current responsible party with ownership interest in the system provides substantial evidence to the Planning Commission of the intent to maintain and reinstate operation of the system.
4. The Decommission Plan shall include but is not limited to financial assurance in the form of a bond, a parent company guarantee, or an irrevocable letter of credit, but excluding cash. The amount of the financial assurance shall not be less than the estimated cost of decommissioning the system, after deducting salvage value, as calculated by a third party with expertise in decommissioning, hired by the applicant. However, the financial assurance may be posted in increments as follows:
  - a. At least 25% by the start of full commercial operation.

- b. At least 50% by the start of the fifth year of commercial operation.
- c. 100% by the start of the tenth year of commercial operation the security shall be continuously maintained for the period of the life of the system.

R. Special Land Use Permit and Site Plan Application Requirements. Application for special land use permit approval shall comply with this Ordinance.

## **ENERGY STORAGE FACILITIES**

### **1. Definitions.**

Energy storage facility means a system that absorbs, stores, and discharges electricity with a nameplate capacity of 50 megawatts or more and an energy discharge capacity of 200 megawatt hours or more. Energy storage facility does not include either of the following:

- i. Fossil fuel storage.
- ii. Power-to-gas storage that directly uses fossil fuel inputs.

Nameplate capacity means the designed full-load sustained generating output of an energy facility. Nameplate capacity shall be determined by reference to the sustained output of an energy facility even if components of the energy facility are located on different parcels, whether contiguous or noncontiguous.

2. An energy storage facility may be located and permitted only if all of the following standards are complied with:

A. Special Land Use - Planning Commission Review: Energy storage facilities may be permitted subject to a special use permit in the \_\_\_\_\_ Zoning Districts.

B. Setbacks: The following minimum setback requirements, with setback distances measured from the nearest edge of the perimeter fencing of the facility:

- a. Occupied community buildings and dwellings on adjacent properties: 300' from the nearest point on the outer wall.
- b. Public road right-of-way: 50' measured from the nearest edge of a public road right of-way.
- c. Nonparticipating parcels: 50' measured from the nearest shared property line.

C. Compliance: The energy storage facility shall comply with the version of NFPA 855 "Standard for the Installation of Stationary Energy Storage Systems" in effect on November 29, 2024 or any applicable successor standard adopted by the Michigan Public Service Commission as provided for in MCL 460.1226(8)(c)(ii).

D. Noise: The energy storage facility does not generate a maximum sound in excess of 55 average hourly decibels as modeled at the nearest outer wall of the nearest dwelling located on an adjacent nonparticipating property. Decibel modeling shall use the A-weighted scale as designed by the American National Standards Institute.

E. Lighting: The energy storage facility will implement dark sky-friendly lighting solutions.

F. Requirements: The energy storage facility will comply with any more stringent requirements adopted by the Michigan Public Service Commission as provided in MCL 460.1226(8)(c)(v).

G. Landscaping: Existing natural land forms on the site which effectively screen the energy

storage facility from adjacent property used for residential purposes shall be preserved to the maximum extent possible.

H. Minimum Lot Size: energy storage facilities shall only be located on lots which are at least twenty (20) acres in size. Adjacent parcels under the same ownership or which are leased by the owner of the energy storage facility may be considered in combination to satisfy the minimum lot size. However, the lots considered in combination shall not thereafter be separated throughout the life of the energy storage facility. Each energy storage facility is permitted as a use authorized by special use permit which review will consider its compatibility with the surrounding area.

I. Abandonment: If an energy storage facility owner or operator intends to abandon and, in fact, does abandon a facility by not operating it for a period of six (6) months, the energy storage facility shall be deemed to be abandoned. The applicant/permit holder will be so notified in writing by the \_\_\_\_\_ and requested to dismantle the site and return it to its original state. If there are mitigating circumstances as to why the site has not been used, the applicant/permit holder may contact the \_\_\_\_\_ and request a six (6) month extension. If a site has been deemed abandoned and no request for an extension is received, the applicant/permit holder will again be notified to dismantle the site and return it to its original state. If the applicant/permit holder does not do this, the \_\_\_\_\_ will have the removal and restoration done at the owner/applicant's expense.

J. Decommissioning Plan: A decommissioning plan is required at the time of special use permit application. The decommissioning plan shall include:

A. The anticipated manner in which the project will be decommissioned, including a description of which above-grade and below-grade improvements will be removed, retained (e.g. access drive, fencing), or restored for viable reuse of the property consistent with the zoning district.

B. The projected decommissioning costs for removal of the energy storage facility (net of salvage value in current dollars) and soil stabilization.

C. The method of ensuring that funds will be available for site decommissioning and stabilization (performance guarantee in the form of surety bond, irrevocable letter of credit, or cash deposit).