

STANDARDS SPECTRUM 5.0 Presentation

EVENT: "PRESENTATION ON STANDARDS"

TITLE: UPS SYSTEMS - Powering Safety & Reliability

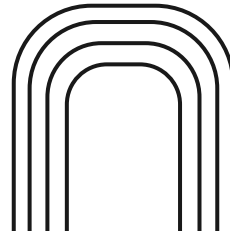
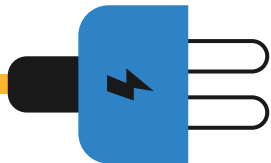
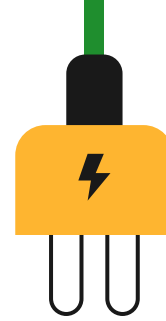
TEAM NAME: TEAM "AURA"

MEMBERS:

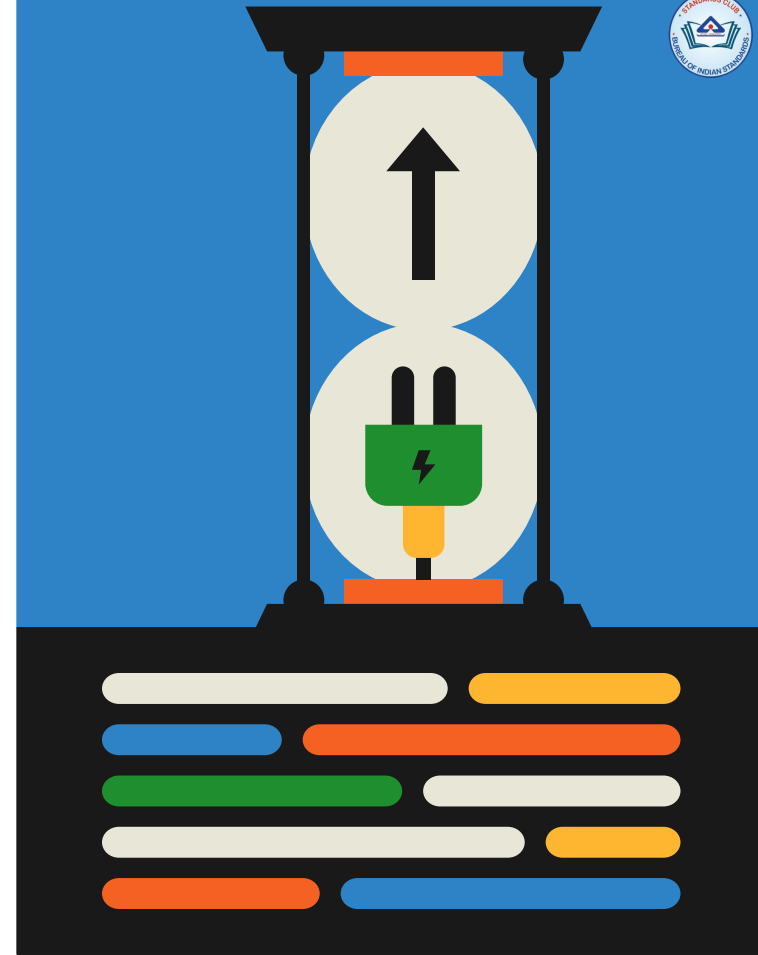
THARUN KUMAR C

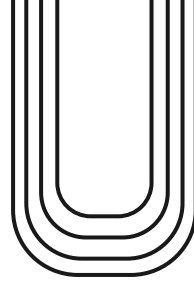
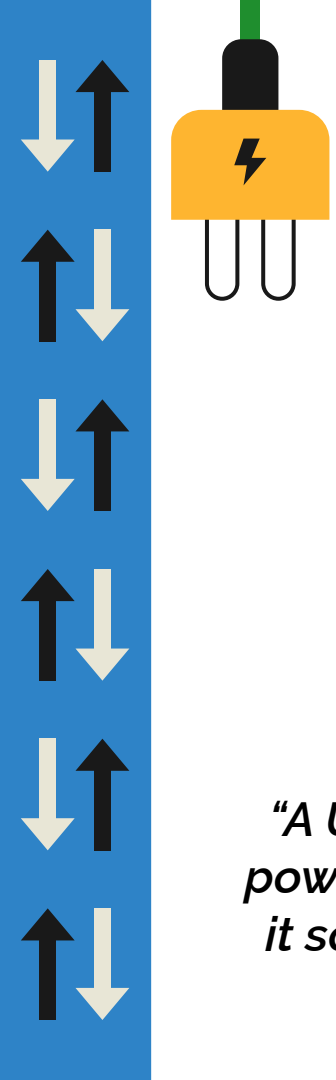
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*"A UPS is supposed to be your knight in shining armor when the power goes out... but with fake certifications and cheap batteries, it sometimes turns into a ticking time bomb, **literally lighting up the office, not with power, but with explosions.**"*

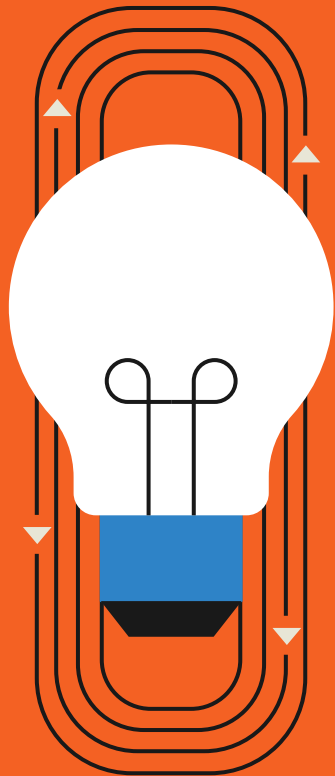


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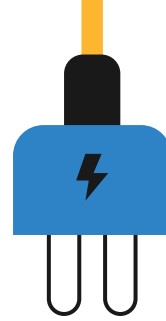
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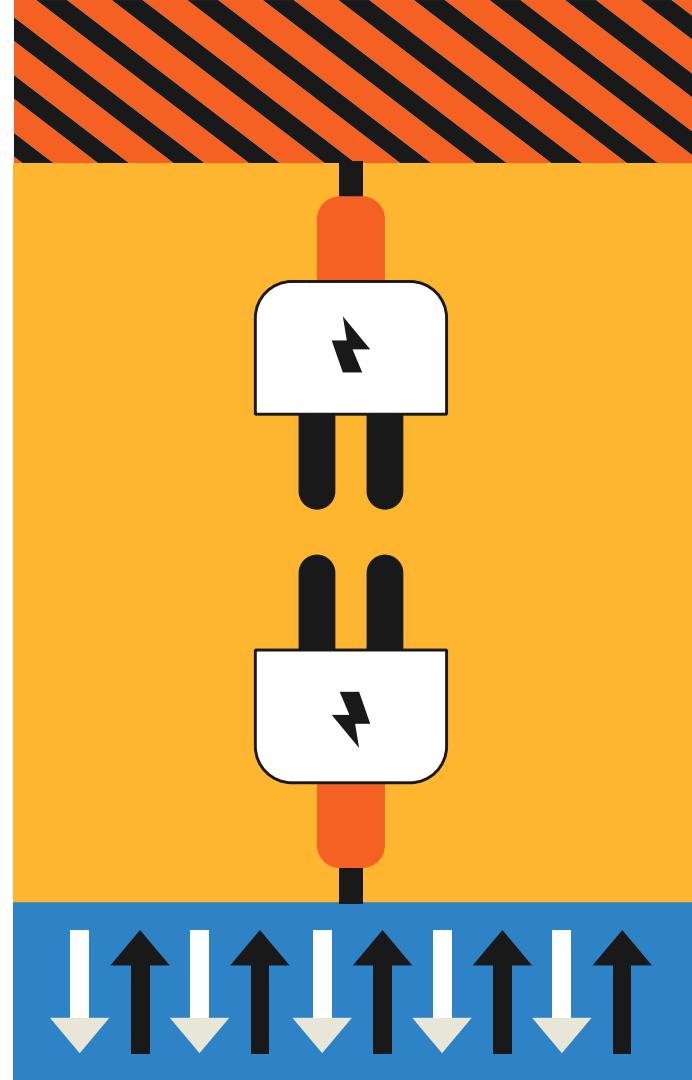


01



PROBLEM STATEMENT

Why Standards matter in UPS?





PROBLEM STATEMENT

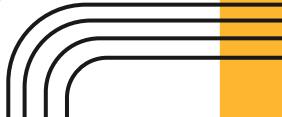
*In recent years, **UPS failures** have increasingly resulted in devastating fires, **violent battery explosions**, and sudden blackouts across homes, offices, and hospitals. These incidents not only damage critical equipment but also put **human lives at risk**, disrupt essential services, and create **long-term safety concerns**.*

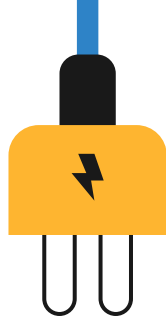
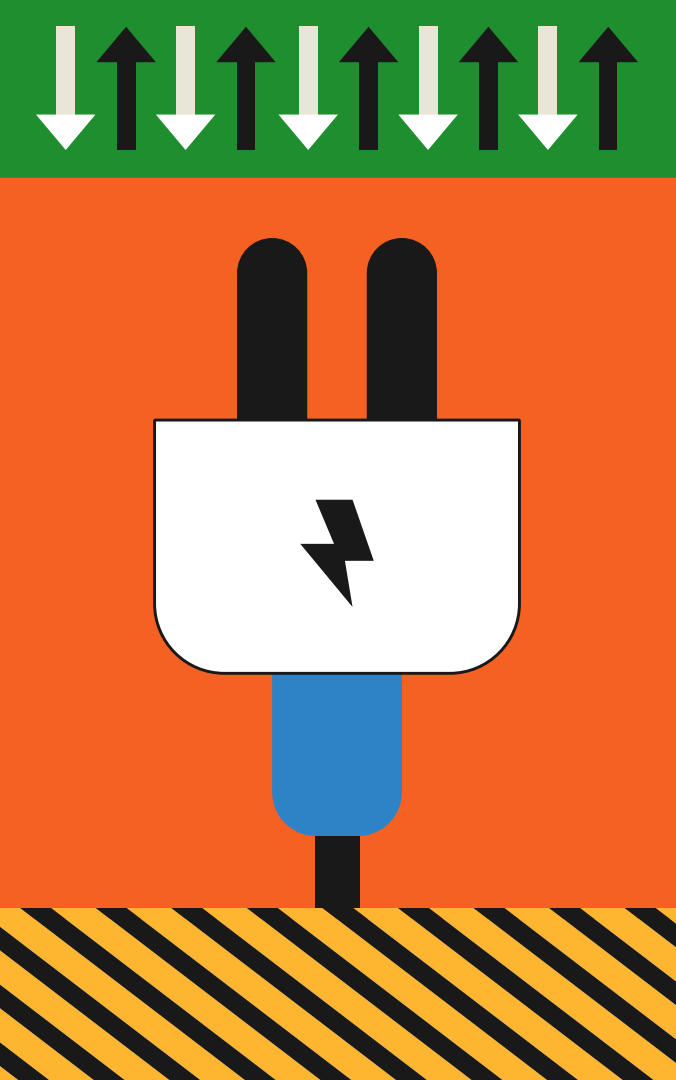
⊘ Common Malpractices:

- Manufacturers selling UPS with fake or expired BIS certifications.
- Use of low-grade, non-compliant batteries that overheat and explode.

⚠ Why These Standards Matter:

- Prevents fire accidents due to overheating or faulty wiring.
- Ensures battery safety and prevents explosions or leakages.





02

FAILURES & MALPRACTICES

Fake certifications and non-compliance practices
by manufacturers

Uttar Pradesh (June 2025)



Kozhikode (May 2025)



Delhi (2025)



Coimbatore (2022)





**UPS Battery Explosion in Office
Leaves Two Injured – Faulty,
Non-Certified Batteries Blamed
Chennai (2018)**

**Woman and Two
Daughters Die of
Suffocation After UPS
Batteries Explode at Their
Coimbatore Home (2022)**

**Recurring Fires Linked to
Overheating UPS Batteries
at Kozhikode Medical
College (May 2025)**

**Chandigarh Hospital Fire
UPS Battery Sparks Force
Relocation of Systems
(2023)**

**An elderly man, 62, died instantly when an UPS battery
exploded inside his home -
Uttar Pradesh, June 2025**

Common Malpractices in UPS Industry



**Fake BIS
Certification**



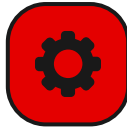
**Low-Grade
Batteries**



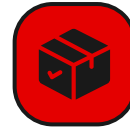
**Skipping Safety
Features**



**Improper
Installation**

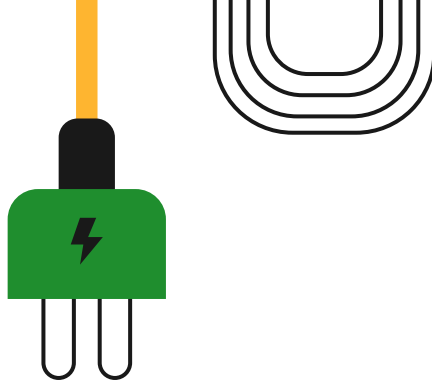


**Ignoring
Maintenance**



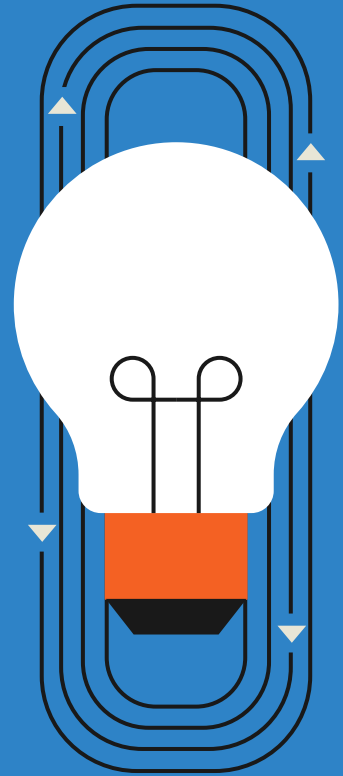
**Cheap
Imports**

03



Mapping Problems with BIS

How each failure could have been prevented
with proper BIS compliance

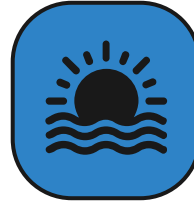


KEY BIS STANDARDS FOR UPS



IS/IEC 62040-1

Makes sure UPS is safe from fire, shocks, and overheating.



IS 9000 Series

Checks if UPS can work well in tough conditions like heat, humidity, or vibrations.



IS/IEC 62040-3

Tests if UPS gives stable voltage and quick backup when power fails.



IS 13252 (Part 1)

Keeps UPS safe for use with IT and office devices like computers and servers.



IS 16242

Ensures batteries don't leak, explode, or overheat.



How to Identify a Proper (BIS-Certified) UPS

1. Standard
Reference
Number

2. Technical
Details

3. BIS Certification
Mark

4. Registration
Number



KEY UPS TESTS



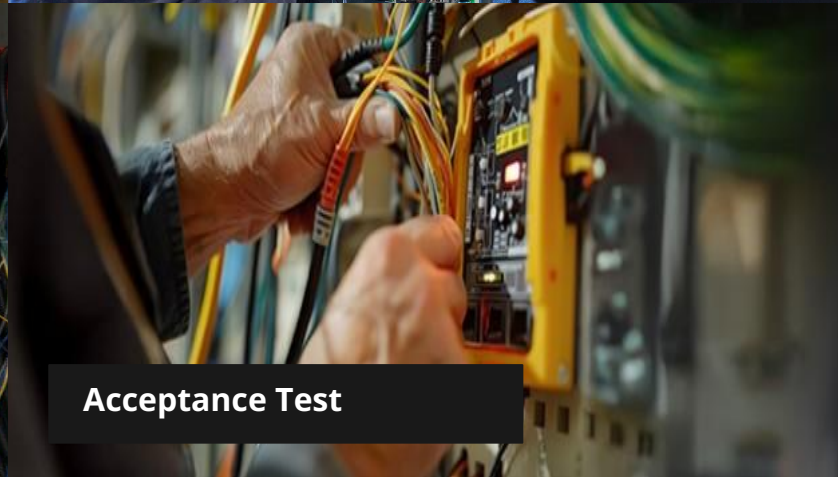
Battery Safety & Performance Test



Factory Tests



Environmental & Reliability Test



Acceptance Test

Renewal & Verification



Validity & Renewal Period

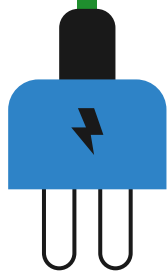
- BIS Registration is generally valid for 2 years.
- Can be renewed for up to 5 years at a time (if product and standards remain unchanged).
- Renewal requires fresh test reports from BIS-recognized labs.



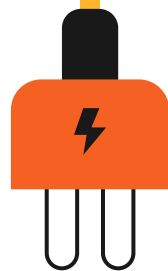
How to Check BIS Certification (Layman Friendly)

1. Website: www.bis.gov.in → "Certification" → "Verify License"
2. App: Download BIS Care App (official app on Google Play / App Store).
 - Scan the QR Code or Registration Number on the product.
 - Instantly see if the certification is valid or expired.





What To Do When a UPS Burns



**Cut Power
Immediately**



**Never Use
Water**



**Use Fire
Extinguisher
/ Dry Sand**



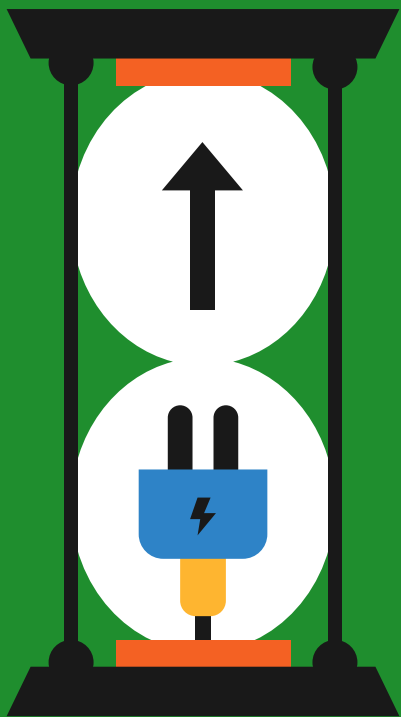
**Avoid Toxic
Smoke**



**Call for
Emergency**

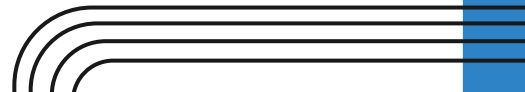


**Safe
Disposal**



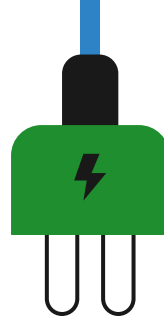
BIS FRIENDLY UPS DESIGN

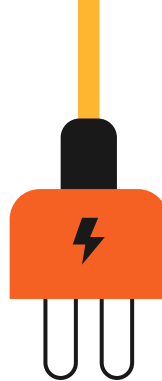
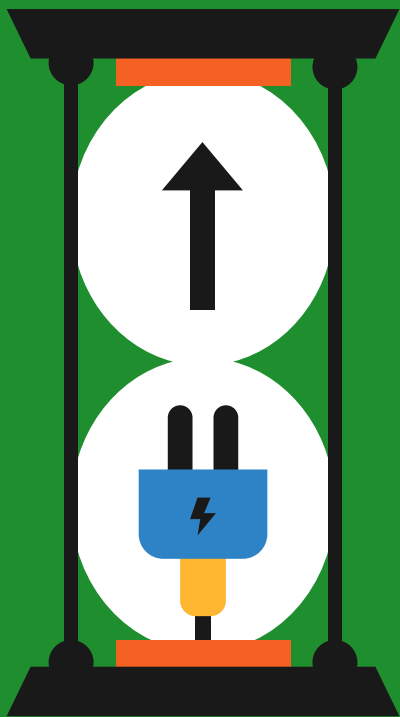
A new UPS design proposal which is BIS-friendly



BIS-Friendly UPS Design

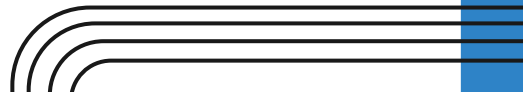
1. Fire & Shock Safety – IS/IEC 62040-1
2. Stable Power Output – IS/IEC 62040-3
3. Certified Battery Safety – IS 16242
4. Environmental Endurance – IS 9000 Series
5. IT Equipment Protection – IS 13252 (Part 1)
6. Smart Monitoring Features – BIS Care Integration





CONCLUSION

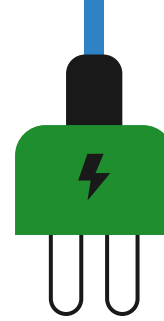
A safer tomorrow depends on the standards we follow today



Conclusion: Standards for Safety

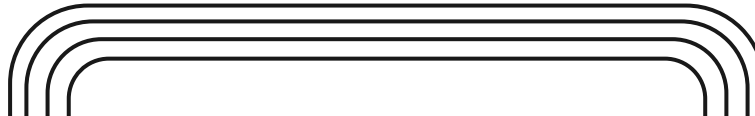
- **Standards Save Lives** – BIS compliance ensures UPS systems prevent fire accidents, toxic leaks, and power failures.
- **Fake Certifications = Real Dangers** – Non-compliant UPS units have led to explosions, fires, and loss of lives.
- **Prevention is Possible** – Every reported failure could have been avoided with strict adherence to BIS standards.
- **Our Proposal** – A BIS-friendly UPS design that combines safety, reliability, and smart monitoring for better protection.
- **The Way Forward** – Awareness + Compliance + Innovation = Safer Homes, Hospitals, and Industries.

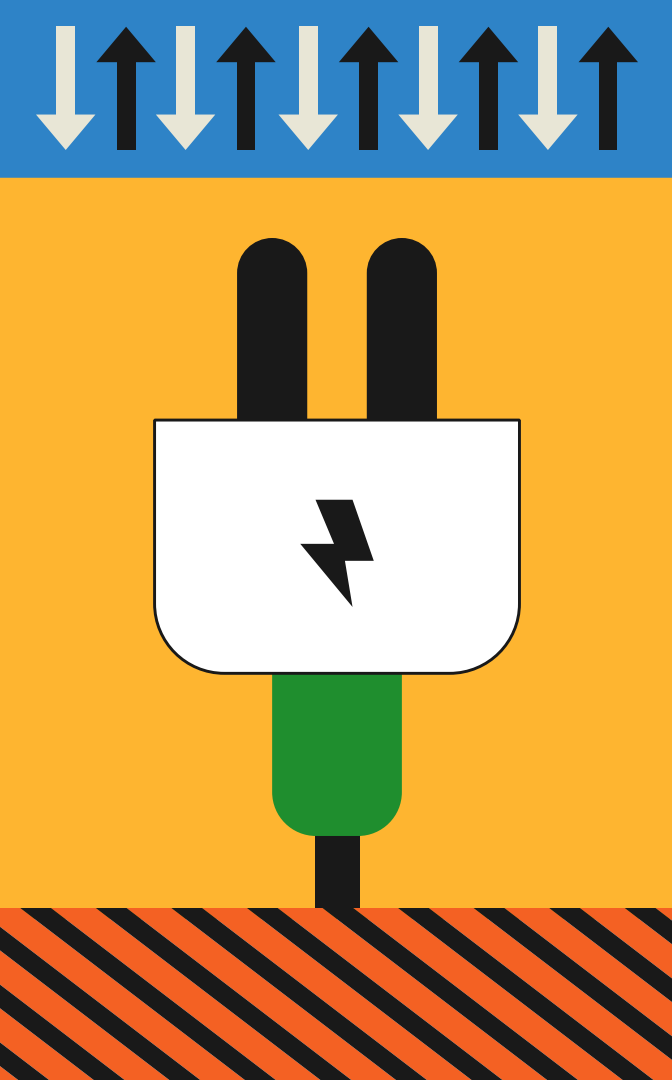
A safer tomorrow depends on the standards we follow today.



REFERENCES

- “Woman, two daughters die of suffocation after UPS batteries explode at their home in Coimbatore.” *Times of India* (2022).
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👉 Indian Express
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- “Testing of UPS Devices.” *Electrical Engineering Portal*.
👉 <https://electrical-engineering-portal.com/testing-of-ups-devices>





THANK YOU!

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