

Risk-Informed Inservice Inspection Support, Extension, and Implementation

Project Updates



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NRC-Industry NDE Technical Information Exchange Meeting
1/22/2026

RFA: Risk-Informed ISI Development and Application

1995-2005

Development of the EPRI Traditional Risk Informed Inservice Inspection Methodology

- Pilot plants approved by NRC
- NRC approves RI-ISI Methodology for generic use
 - [EPRI Report TR-112657, Rev B-A](#)
- Streamlined regulatory review process defined



2005-2015

Wide scale application of RI-ISI in the US and several pilot studies and test cases within the international community

- EPRI Streamlined RI-ISI Methodology developed
 - [EPRI Reports 1022944 and 3002003029](#)
- Regulatory review and approval no longer required prior to implementation

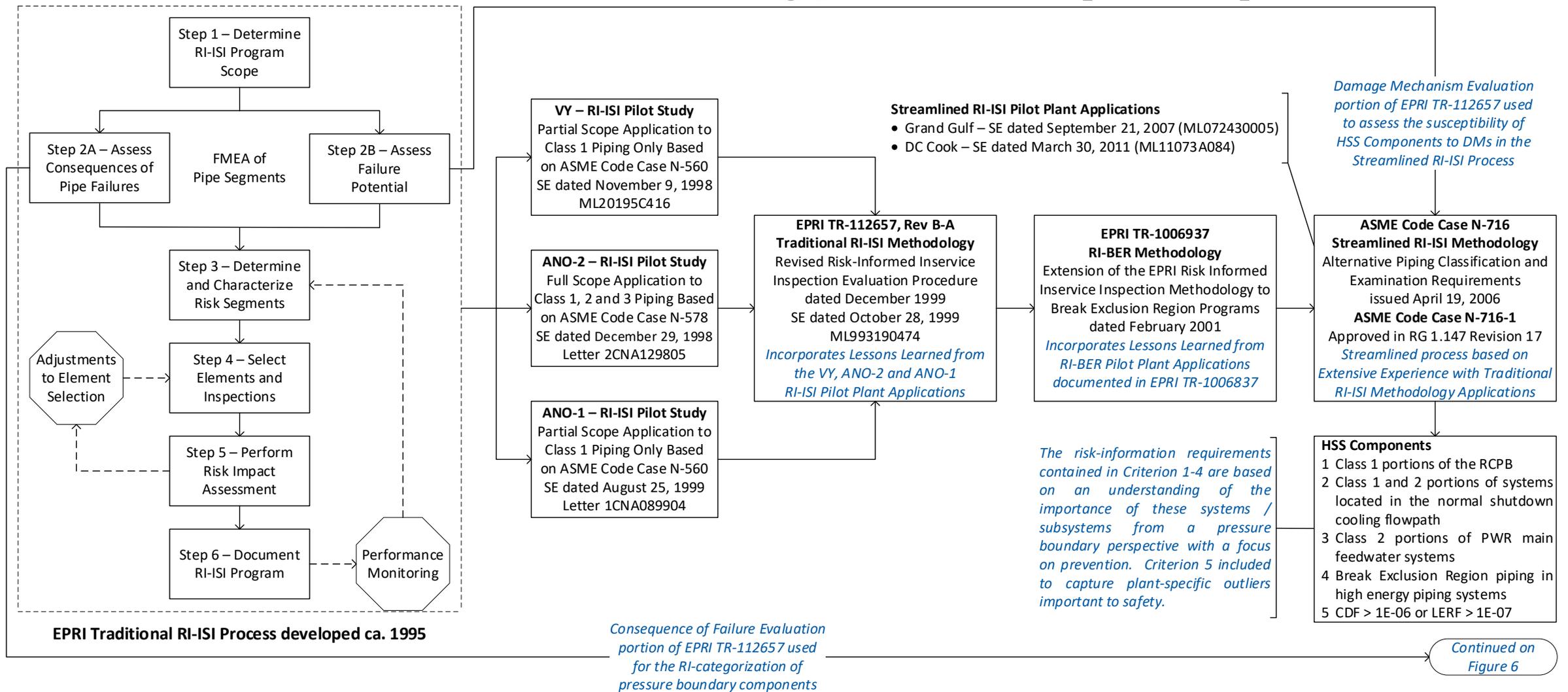
2015-Present

Application to other regulatory environments and non-light water reactor designs

- RI surface examination requirements
- Alternative to address limited examination coverage requirements
- Alternative to RPV Threads-in-Flange examination requirements
- RI Repair/Replacement requirements
- Enhanced RI passive categorization method for 10CFR50.69 applications
- RI High Energy Line Break
- RI Safety Classification for New Builds
- Applications for Long Term Operation

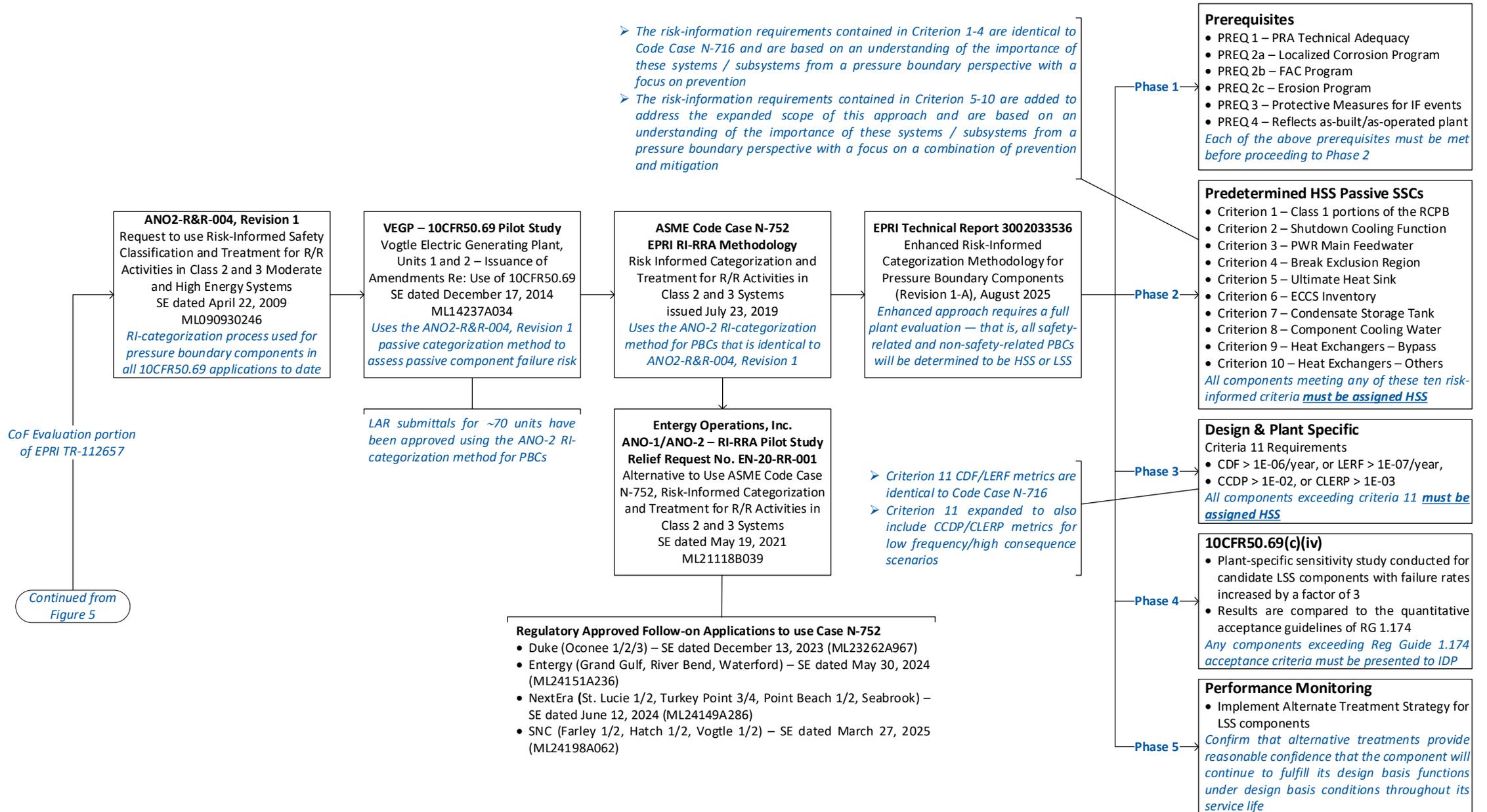
EPRI research continues to inform the further development and application of risk concepts to ISI and other programs where it can be beneficial

Evolution of EPRI RI-technology to PBCs (1 of 2)



30 years of experience applying the EPRI RI-technology to the pressure boundary informed the development of the Enhanced Passive Categorization Methodology (3002033536)

Evolution of EPRI RI-technology to PBCs (2 of 2)

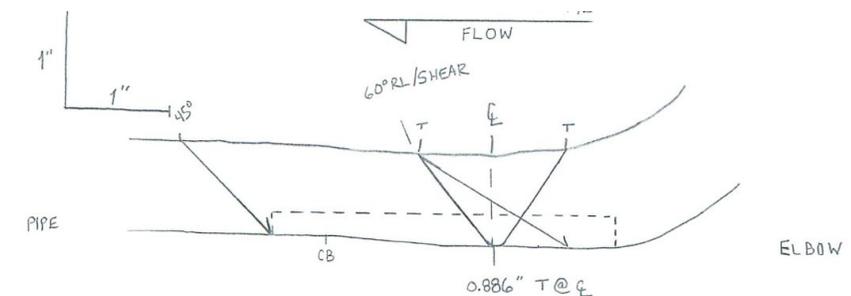
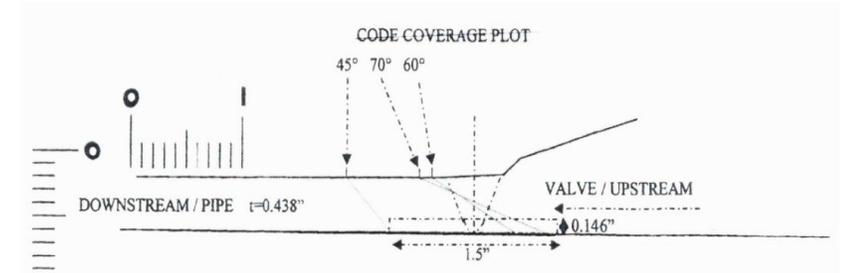


Enhanced RI Passive Categorization and RI-HELB Projects

- **EPRI 3002033536** – Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
 - [Safety evaluation received July 15, 2025](#)
 - [-A version issued August 25, 2025](#)
 - [-A Topical Report Verification form received September 9, 2025](#)
 - 9 utilities have indicated plans to submit LARs to adopt the method in the near-term including plants that already have 50.69 and want to change passive methods and new 50.69 applications (includes several fleet submittals)
- **EPRI 3002033918** – Risk-informed High-Energy Line Break Evaluation Requirements
 - [Safety evaluation received August 29, 2025](#)
 - [-A version issued October 10, 2025](#)
 - [-A Topical Report Verification form received November 24, 2025](#)
 - Constellation plans to submit LARs for MUR updates using the RI-HELB methodology
- **EPRI IR-2024-0853 R1** – A Whitepaper Regarding the Risk-informed Safety Classification of Pressure Boundary Components for New Construction
 - [Whitepaper submitted by NEI on November 14, 2025](#)

Coverage Estimation Tool

- To increase efficiency and reduce potential errors, EPRI members have asked us to develop a digital tool to aide in evaluating UT coverage
- A successful tool should exhibit the following features:
 - Easily import component geometry from T&C plots
 - Intuitive definition of the inspection volume and ultrasonic scan plan
 - Versatile enough to allow even complex components to be represented
 - Fast and interactive feedback to allow error-free input of the required parameters
 - Clearly indicated and interpretable coverage results
- This will be a web-based tool that will allow results to be saved locally to a computer



Coverage Estimation Tool (continued)

- Project Schedule
 - The Beta Test version of the tool was released on the EPRI Website in November 2025
 - The Beta Test is currently running through Q2 2026
 - Expect to incorporate final changes and release the users guide and Coverage Estimation Tool in **Q4 of 2026**



Risk-Informed In-Service Inspection – Wiki Page

- This Risk Informed ISI was one of the pilot applications for the EPRI NDE Subject Area Wiki-pages
 - Modeled using the existing BWRVIP Wiki-page
 - Will provide similar information to the single source RI-ISI report
 - Allows EPRI Staff to update content more frequently
 - EPRI Members will be able to access source reports directly from the Wiki-page using hyper links
 - Released in December 2026
 - www.riskinformed.epri.com

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Main Page Read Search BWRVIP NDE

BWRVIP NDE

This wiki contains Nondestructive Evaluation (NDE) research and resources pertaining to the Boiling Water Reactor Vessel and Internals Program (BWRVIP).

The categories of information and content included in this wiki are detailed below:

- **NDE Development Research:** Results of NDE research conducted in the NDE Development task of the BWRVIP Inspection Committee.
- **Other NDE Research:** Results of NDE research conducted by BWRVIP that was not conducted as a part of the NDE Development task of the BWRVIP Inspection Committee.
- **Ongoing NDE Activities:** Information summarizing NDE demonstrations and NDE research projects that are ongoing at EPRI.
- **Operating Experience:** Resources containing various types of operating experience related to BWRVIP. This includes NDE Awareness updates (intended to assist sites in upcoming examinations and outage work), and plant operating experience that has been shared previously during BWRVIP Inspection Committee meetings.
- **Training:** Links to EPRI training opportunities pertaining to NDE and the BWRVIP.
- **BWRVIP Links:** Miscellaneous links to other helpful tools and resources developed and used by the BWRVIP.

Revision Control

Only EPRI personnel can edit wiki content. Each wiki page that has technical content has a record of revisions at the bottom of the page. The record of revisions summarizes technical changes made for each revision. Minor, editorial changes may be made without changing the revision number.

When substantive technical changes are made to a page, or new pages are added, member review may be obtained. Since changes are made "live" within the wiki environment, a version that is currently in review will have "in review" following the revision number. Pages or revisions that are in review should be considered preliminary until the review is complete and the "in review" has been removed from the revision number.

Contact Us

If you have any questions about EPRI BWRVIP or need support, please [email us](#).

If you have comments on this wiki or identify any issues, please [email us](#).

Help

For further information about EPRI, call the EPRI Customer Assistance Center at 800-313-3774 or e-mail askepri@epri.com.

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New and Future Projects

- Degradation Mechanism (DM) Assessment CBT and Documentation Tool – **Ongoing (expected release Q2 2026)**
- Consequence of Failure (CoF) Evaluation CBT and Documentation Tool – **Ongoing**
 - Historic context of each step in the DM & CoF evaluation process
 - Applicable EPRI and industry guideline documents
 - Examples of completed DM & CoF evaluations
 - Intuitive, menu-driven forms to collect, evaluate, and organize data for DM & CoF evaluations



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