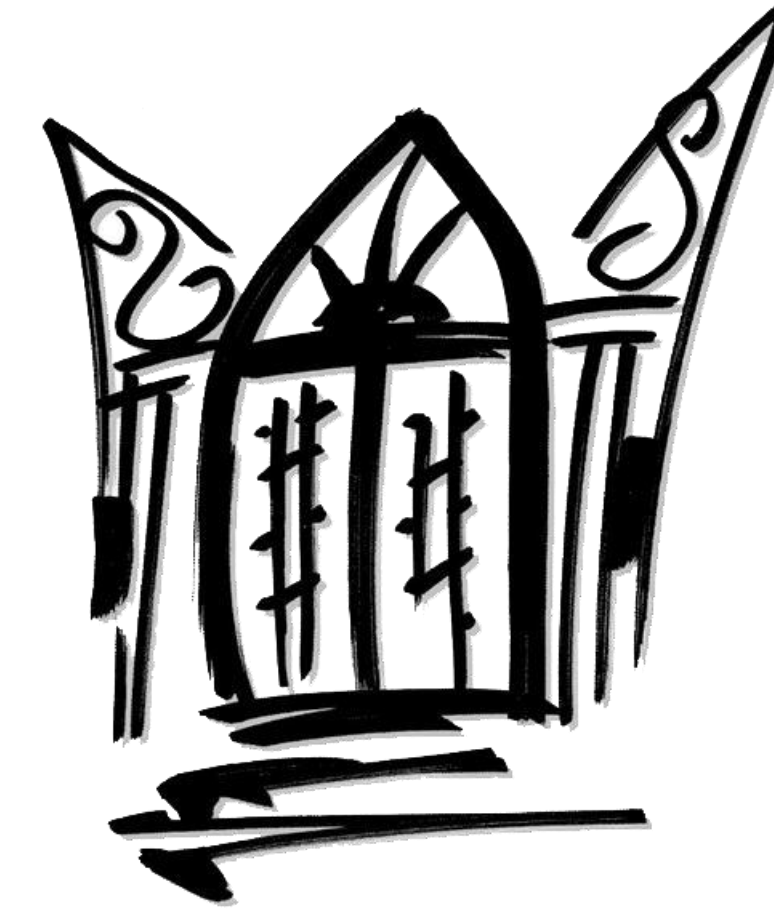




Improvement of Aging and Closure Performance of Nonconformance Reports in the Distribution Pole Program Through Target-Based Queue Management

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Abstract

This project examined the post-construction Nonconformance Report process in the Distribution Pole program to improve aging and closure performance through the target-based queue management framework. The work used workflow review, data preparation, baseline definition, framework design, and dashboard-based monitoring to support escalation controls and operational follow-up. Results were evaluated by comparing the active NCR population on April 14, 2026, and May 11, 2026. Open reports changed only slightly, from 350 to 348, but median aging decreased from 125 to 51 days, representing a 59.2% reduction. The oldest backlog categories improved, while justified coverage of active NCRs above 90 days increased from 49.75% to 100.00%. Although the original overdue measure based on more than 30 days worsened, the revised 45-day escalation thresholds showed improvement. Overall, the project exceeded its minimum objective of reducing median aging by at least 8%.

Introduction

A large electric utility organization uses Nonconformance Reports (NCRs) to document post-construction deviations and control each case through evaluation, correction, verification, and closeout. Within this environment, NCRs support traceability, accountability, and documentation of corrective actions. This project focused on the Distribution Pole program, which was selected as the pilot scope because it contains a meaningful population of post-construction NCRs and provides a practical opportunity to evaluate whether a more structured control approach can improve closure performance. The study was limited to the post-construction NCR workflow rather than the full construction lifecycle. Internal project work identified several weaknesses affecting closure timeliness, including inconsistent aging rules, limited escalation logic, weak overdue visibility, and fragmented accountability.

Literature Review



Slow closure is linked to fragmented tracking and limited corrective-work visibility [1][2]



Reliable closeout depends on standardized records, ownership, and evidence requirements [3]



Closure targets are effective when missed targets trigger escalation and management action [4]



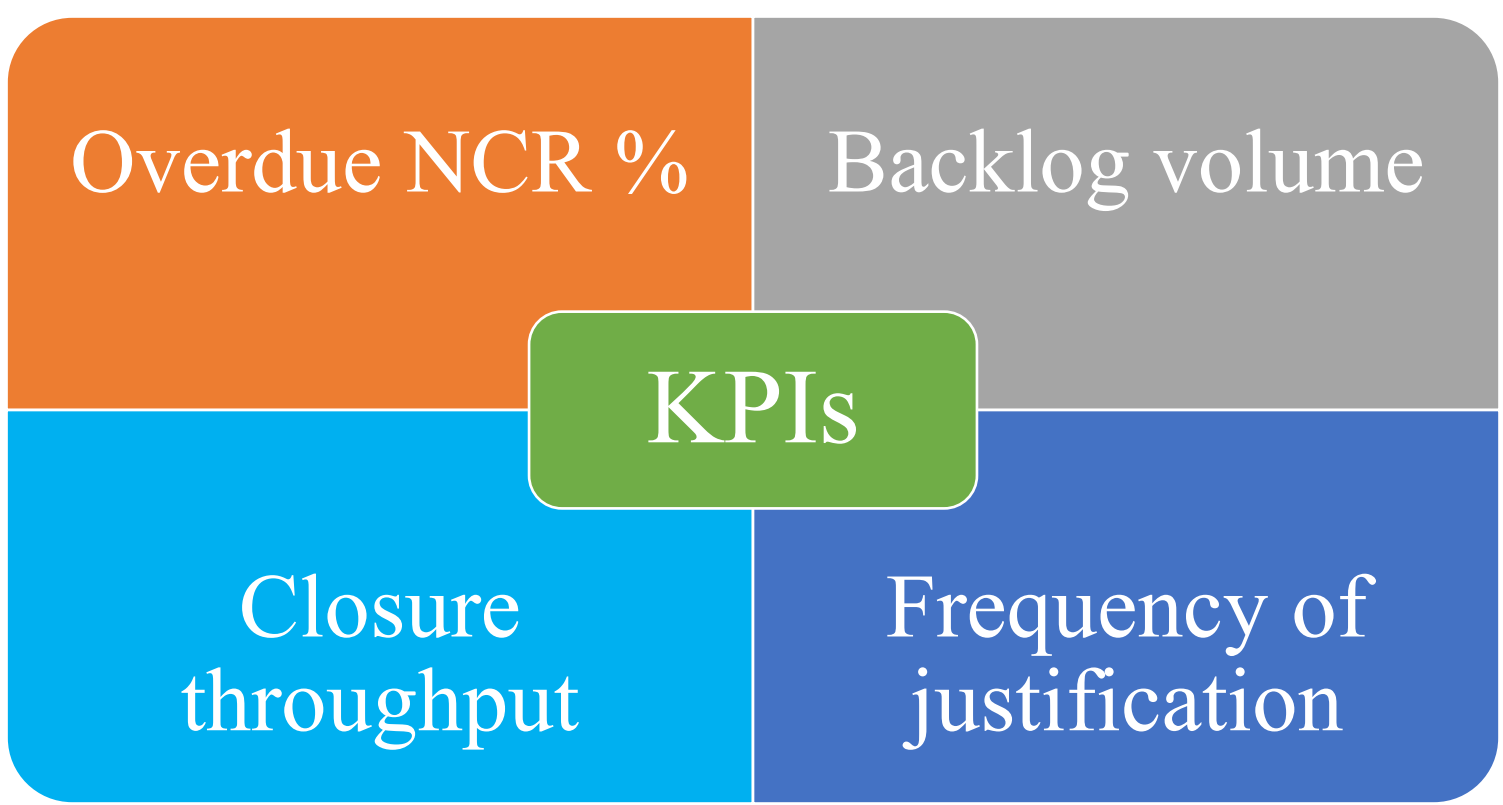
Dashboards strengthen accountability by making overdue items and bottlenecks visible [5]



Prioritization and CAPA-aligned controls improve traceability and resolution performance [6][7]

Objective & KPIs

Objective is to reduce the median aging time of Distribution Pole NCRs by at least **8%**, measured from assignment to closeout.



Methodology



Figure 1. Methodological Sequence for NCR Baseline and Pilot Design

Table1. Target-Based Queue Management Framework Components

Component	Rule / Design	Responsibility
Closure target	45-day operating target from assignment to closeout	NCR Owner, Responsible Group, QC Supervisor
Justification rule	Required for open NCRs above 90 days	Responsible Group, QC Supervisor
Escalation thresholds	0–45 routine; 46–90 escalated; 91–120 high; >120 critical	QC Supervisor, Project Manager, Senior Management
Prioritization logic	Issue priority combined with aging severity	QC Supervisor
Dashboard monitoring	Aging, overdue status, justification, accountability	QC Supervisor, Senior Management
Follow-up flow	Assignment → correction → verification → closeout	Responsible roles by stage

Results and Discussion

Baseline and pilot-period performance were compared using active backlog, aging severity, justification coverage, and closure throughput indicators. Aging was calculated using business days.

Table 2. Baseline and Current KPIs Comparison for Active NCRs

KPI	Baseline	Current
Active NCRs	350	348
Closure Throughput (NCR/business day)	3.65	4.32
Justified Coverage >90 days	49.75%	100.00%
Overdue NCRs >45 days %	60.57%	52.30%
Median Aging (days)	125	51

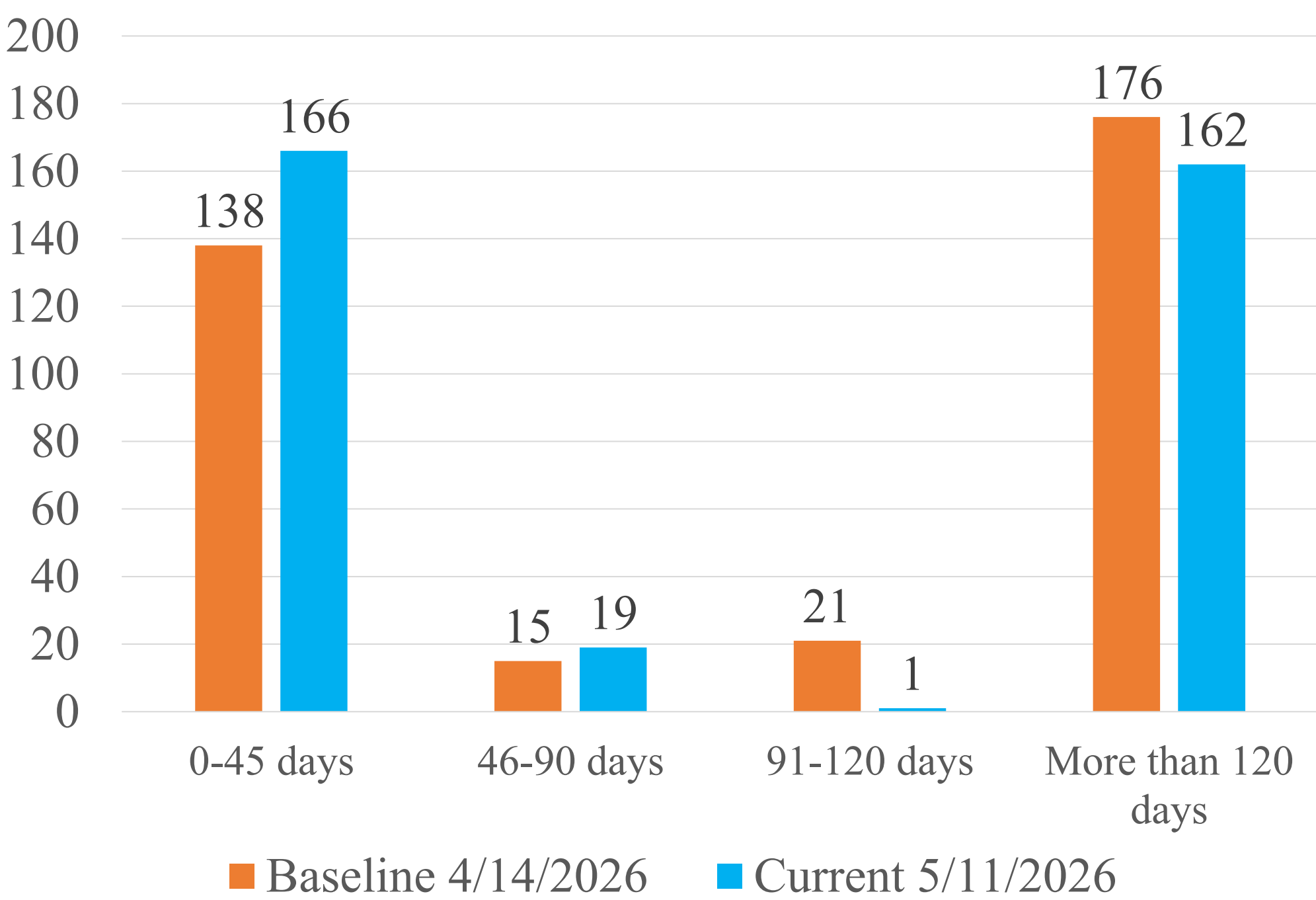


Figure 2. Comparison of Active NCRs by Revised Escalation Group

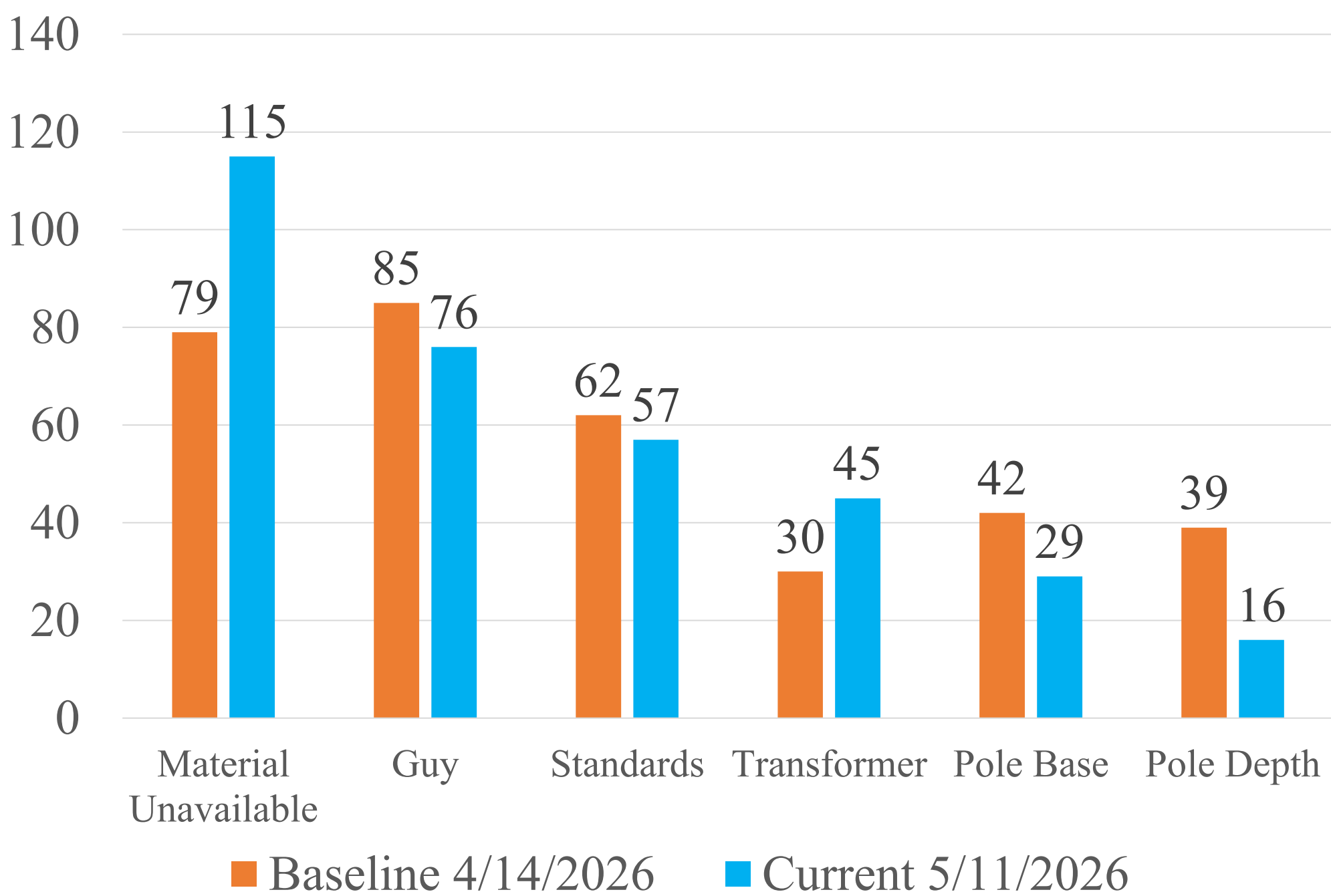


Figure 3. Top Active NCR Issue Types: Baseline vs. Current

Conclusions

The project improved NCR aging and closure control in the Distribution Pole program through the target-based queue management framework.

Median aging decreased from **125 days to 51 days**, representing a **59.2% reduction** and exceeding the minimum objective of **8%**.

The oldest backlog categories were reduced, and justified coverage for open NCRs above 90 days improved from **49.75% to 100.00%**.

Although the original **>30-day** overdue measure did not improve, the revised **45-day escalation thresholds** provided a more realistic management-control basis for this process.

Dashboard visibility, prioritization, and accountability-based follow-up strengthened management action and improved backlog aging severity and closure performance.

Future Work

- ❑ Develop a criticality score that combines issue priority and aging severity to improve closure sequencing.
- ❑ Extend the pilot approach to other programs.

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