Delivery Operations – Undelivered and Partially Delivered Routes

AUDIT REPORT
Report Number 21-262-R23 | December 16, 2022

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Highlights

Background

The U.S. Postal Service delivered over 129 billion mailpieces on more than 233,171 routes in fiscal year (FY) 2021. The Postal Service's goal is for carriers to deliver all mail along their assigned route on the scheduled delivery day. However, there are situations where mail may not be delivered on a route for a particular day due to the unavailability of carriers, severe weather, or other reason. Routes are "undelivered" when all customers on a route do not receive daily deliveries and are "partially delivered" when only some customers do not receive daily deliveries.

What We Did

Our objective was to assess the Postal Service's management of undelivered and partially delivered routes. We summarized previous OIG audits that identified delayed mail results from FYs 2021 and 2022, conducted observations of delivery operations at 12 selected sites, analyzed data, and interviewed Postal Service officials.

What We Found

The Postal Service has tools, including Delivery Condition Visualization, Non-Delivery Survey, Mail Rotation Dashboard, and a Daily Triangulation Report, that identify delayed mail on delivery routes; however, these tools do not identify the number of undelivered and partially delivered routes nationally. Further, the Postal Service's National Delivery Intelligence tool, which identifies assumed undelivered routes, does not provide the actual number of undelivered routes. These tools are limited due to technology constraints and reliance on the manual recording of delayed mail by delivery unit management, which is often underreported. As a result, the actual number of undelivered and partially delivered routes is unknown.

The Postal Service has opportunities to leverage existing tools and technologies to identify the actual number of undelivered and partially delivered routes. This could include integration of delivery operations data with Informed Delivery to eliminate failures to manually report delayed mail. Data on delayed mail and undelivered and partially delivered routes could be used to notify customers of delays and service outages in near real-time. Notification of service interruptions is important to inform customers and provide world-class, universal mail service.

Recommendations

We recommended management finalize system enhancements to identify undelivered and partially delivered routes and enhance processes and tools to notify customers of delayed mail and undelivered and partially delivered routes.

OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

December 16, 2022

MEMORANDUM FOR: ANGELA H. CURTIS
VICE PRESIDENT, DELIVERY OPERATIONS

Amanda H. Stafford

FROM: Amanda H. Stafford
Deputy Assistant Inspector General
for Retail, Marketing, & Supply Management

SUBJECT: Audit Report – Delivery Operations – Undelivered and Partially Delivered
Routes (Report Number 21-262-R23)

This report presents the results of our audit of Delivery Operations – Undelivered and Partially
Delivered Routes.

We appreciate the cooperation and courtesies provided by your staff. If you have any questions
or need additional information, please contact Janet Sorensen, Director, Sales, Marketing and
International, or me at 703-248-2100.

Attachment

cc: Postmaster General
Corporate Audit Response Management

Results

Introduction/Objective

This report presents the results of our self-initiated audit of the U.S. Postal Service's management of undelivered and partially delivered routes (Project Number 21-262). Our objective was to assess the Postal Service's management of undelivered and partially delivered routes. See Appendix A for additional information about this audit.

Background

The Postal Service delivered over 129 billion mailpieces on more than 233,171 routes in fiscal year (FY) 2021. The Postal Service categorized the vast majority of these routes as city routes (about 61 percent) or rural routes (about 35 percent).[1] The Postal Service's goal is for carriers to deliver all mail along their assigned routes on the scheduled delivery day, which is consistent with the federal statute that requires the Postal Service to deliver mail six days a week, except in specific cases.[2] However, there are situations where mail may not be delivered on a route for a particular day, such as:

- *Unavailability of carriers*: When a carrier(s) may not be available for a particular day (e.g., due to unscheduled leave).

- *Severe weather/natural disasters*: When delivery units are in locations impacted by severe weather or natural disasters, local delivery management may not send carriers out on their routes or have carriers return early before making it to each address on the route.

- *Other reasons*: Traffic, accidents, and blocked receptacles that prevent the carrier from servicing the route.

Routes are considered "undelivered" when no customers on a route receive daily deliveries and are "partially delivered" when only some customers do not receive daily deliveries. The Postal Service assigns most undelivered mail as "delayed"[3] (see below) and local delivery unit managers are responsible for reporting daily delayed mail information, such as the number of pieces and corresponding reasons for the delay. Forms used to collect daily undelivered mail information differ based on the type of route:

- *City Routes*: Managers and/or carriers are to complete a Postal Service (PS) Form 1571, *Undelivered Mail Report.*

- *Rural Routes*: Carriers are to complete a PS Form 4240, *Rural Carrier Trip Report.*

Delayed Mail *vs.* Undelivered Routes:

Delayed mail does not necessarily mean a route is undelivered or partially delivered. For example, a carrier provided delivery to their route on Tuesday. However, fifteen letters scheduled for Tuesday delivery were not delivered due to a blocked mail receptacle. These fifteen letters are considered "delayed," but the route was considered delivered.

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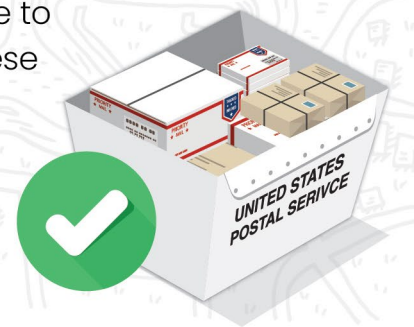
1   The remaining 4 percent were contract delivery service routes.
2   Public Law 117-108 – April 6, 2022.
3   Delayed mail is not delivered on the scheduled delivery day. Not all undeliverable mail is considered delayed (e.g., pieces that were refused by the recipient).

- *Contract Delivery Service*: Carriers are to complete a PS Form 5500, *Contract Route Irregularity Report*.

Postal Service officials stated that they developed a variety of tools to help capture delayed mail data, which could also be used to indicate undelivered or partially delivered routes, such as:

- *Delivery Condition Visualization (DCV)*[4]: Rolled out nationwide in April 2022, this system allows delivery unit management to manually self-report delayed mail data and enter reasons for the delays using free-form text. As of September 2022, management may also use DCV to identify routes with delayed mail. Future DCV enhancements for 2023 include developing route-level reporting by including a drop-down menu to indicate undelivered or partially delivered routes.

- *Non-Delivery Survey*: This survey, established in January 2022, allows delivery unit management to self-report delayed mail on individual routes. The Postal Service stated that they created the survey as an interim solution until they reprogram DCV to report a route as undelivered or partially delivered. This survey showed delayed mail on 83,592 of more than 233,000 (36 percent) routes from March 10 through October 20, 2022, but does not have information on the actual number of undelivered or partially delivered routes.

- *Mail Rotation Dashboard*: This dashboard, established in January 2022, provides management with an overview of data on route-level, same-day, and consecutive-day delays to help ensure that no route has more than a single day of non-delivery. The Postal Service improved this dashboard in September 2022 by adding delayed mail volume and identifying the oldest date for delayed mail. We reviewed a one-day snapshot of data from this dashboard (October 13, 2022) which reported 21 of more than 233,000 routes (less than 1 percent) with delayed mail for three consecutive days. However, the dashboard does not identify the number of undelivered or partially delivered routes. Enhancements for 2023 include integration with DCV and the ability to identify undelivered and partially delivered route designations.

- *Daily Triangulation Report*: Created in June 2021, this tool aggregates various Postal Service delivery data indicators — such as estimated deliveries that are not made each day, customer complaints per route, and self-reported delayed mail — and ranks units according to their performance. District, area, and headquarters management use the data to assess the health and operational condition of the delivery units and address issues to improve delivery operations.

- *National Delivery Intelligence (NDI)*: Launched in July 2021, this application estimates potential route and delivery point failures by comparing a carrier's Global Positioning System (GPS) movements from the carrier's Mobile Delivery Device (MDD)[5] with the known path of a delivery route. NDI allows upper management to review the assumed status of delivery success at the route and delivery point level.[6] NDI estimated that there were 69,392 instances out of 87 million possible deliveries (less than 1 percent) that were potentially not delivered one day or more between July 27, 2021, and October 20, 2022. However, it does not have information on the actual number of undelivered or partially delivered routes. NDI estimated there were 261 instances out of 102,202 possible deliveries (less than one percent) that were potentially not delivered one or more days at 10[7] of the 12 selected delivery units.

Finding #1: Undelivered and Partially Delivered Routes Are Unknown

The Postal Service has tools, including DCV, Non-Delivery Survey, Mail Rotation Dashboard, and a Daily Triangulation Report, that identify delayed mail on delivery routes; however, these tools do not identify the number of undelivered and partially delivered routes nationally. Further, NDI identifies assumed undelivered routes, but was designed as an indicator rather than a method of identifying the actual number of undelivered routes. These tools are limited due to technology constraints and the reliance on delivery unit management manually recording delayed mail, which is often underreported. As a result, the actual number of undelivered and partially delivered routes is unknown.

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4   The Postal Service replaced the Customer Service Daily Reporting System (CSDRS) with DCV as of April 1, 2022.
5   The MDD uploads scanned packages and special services mail that afford customers near real-time scanning information.
6   During the COVID-19 pandemic, the Postal Service wanted to ensure that package delivery occurred at least every three days so customers could get medicines and other important packages. The dashboard continues to measure package delivery every three days.
7   The ten units included Congress Heights Station, Washington, DC; La Plata Post Office, La Plata, MD; Monticello Station, Williamsburg, VA; Rochester Post Office, Rochester, IN; Tarrant Post Office, Birmingham, AL; Alpharetta Carrier Station, Alpharetta, GA; Hollywood Station, Memphis, TN; South Lake Tahoe Post Office, South Lake Tahoe, CA; Greenmead Station, Hawthorne, CA; and Fallon Post Office, Fallon, NV.

Delayed Mail Tools

DCV, the Non-Delivery Survey, and the Mail Rotation Dashboard do not distinguish the number of undelivered and partially delivered routes nationally. As of September 1, 2022, the Postal Service updated these tools to identify the routes associated with delayed mail, but they still do not identify whether a specific route was undelivered or partially delivered. The Postal Service has plans to develop route-level reporting in DCV by including a drop-down menu to indicate undelivered or partially delivered routes by February 2023. This enhancement, however, does not allow categorization of the cause(s) of the undelivered routes for further evaluation by management. Until these enhancements are complete the Postal Service cannot connect delayed mail to undelivered routes. Such information is critical to determining the actual number of undelivered and partially delivered routes and developing mitigating strategies to address the reasons.

NDI Technology Limitations

Technology limitations and the NDI design impact its ability to identify the actual number of undelivered and partially delivered routes. Specifically, we noted the following:

- Not all delivery stops may be counted in the NDI tool if carriers do not slow their vehicle speed sufficiently to register the stop.

- Deliveries may be overcounted on particularly dense routes, including those with cluster boxes, with each box counting as a delivery point.

- MDDs, which record delivery stops, can experience unavoidable and intermittent GPS signal obstruction (e.g., tall buildings, bridges, trees, and weather) during street delivery,[8] resulting in inaccurate location and scan data for the carrier. Postal Service officials also described urban canyons (streets flanked by tall, continuous buildings) as presenting challenges to effective GPS reception as signals can be obstructed or reflected, resulting in actual deliveries not being registered in the system. For example, at two[9] of the 12 selected delivery units we visited, carriers routinely experienced GPS signal obstruction due to surrounding mountains or poor GPS coverage.

- The NDI tool also relies on missing employee timeclock (clock ring) data as an indicator that a route was not delivered, which the OIG previously found is not always accurately captured.[10]

Delayed Mail Reporting

Because letter mail is generally not scanned at the point of delivery, the Postal Service relies on letter carriers to self-report delayed mail on designated forms and supervisors to input this data into DCV. Inherent limitations exist with the design of these processes, which rely almost exclusively on manual identification of delayed mail from carriers and system input from supervisors. Previous OIG reports in FYs 2021 and 2022 identified about 1.2 million delayed mailpieces, while only 231,944 mailpieces (20 percent) were self-reported (see Appendix B). For example, in a recent audit of four delivery units,[11] we observed approximately 24,953 delayed mailpieces, when only 8,704 mailpieces (or 35 percent) were self-reported. In another recent audit of three units,[12] we observed one delivery unit with approximately 2,023 delayed mailpieces, when only 1,148 (57 percent) were self-reported. These data collection shortcomings resulted in the Postal Service not having enough information to understand the magnitude of undelivered and partially delivered routes and effectively manage them.

Technology Solutions

The Postal Service has opportunities to automate the reporting of delayed mail and identify undelivered and partially delivered routes, including reasons for non-delivery, by leveraging existing technology. For example, management could use Informed Delivery, which provides network processing's daily planned mail volume for each delivery point, to compare mail volume for each delivery point to actual delivery data by integrating breadcrumb data from carrier MDDs. This comparison could identify undelivered and partially delivered routes if a carrier's device does not register a stop at the designated delivery point. System-generated alerts could require validation by supervisors to verify that there was associated delayed mail or whether the route was undelivered or partially delivered. These enhancements could eliminate the self-reporting of delayed mail and related compliance concerns to improve the

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8   *Package Delivery Scanning - Nationwide* (Report Number DR-AR-18-001, October 27, 2017).
9   Fallon Post Office, Fallon, NV and Houston Post Office, Houston, MO.
10 *City Delivery Operations - Nationwide Route Management* (Report Number 21-127-R22, February 17, 2022), *Timecard Administration* (Report Number 20-180-R21, December 9, 2020), and *Timecard Administration Follow-Up* (Report Number 22-079-22, September 27, 2022).
11 *Mail Delivery, Customer Service, and Property Conditions Review – Select Units, Albuquerque and Santa Fe, NM Region* (Report Number 22-132-R22, September 20, 2022).
12 *Mail Delivery, Customer Service, and Property Conditions Review – Select Units, Indianapolis, IN Region* (Report Number 22-091-R22, June 22, 2022).

accuracy and completeness of undelivered and partially delivered route reporting. Once functional, the Postal Service could also use Informed Delivery to directly communicate mail delivery issues to customer subscribers.

Regarding reasons for non-delivery or partial delivery of routes, DCV could be automated with drop-down features or radio buttons, rather than free-form text entry, to indicate reasons for non-delivery or partial delivery of routes. This would allow for the standardization of reporting causes for non-delivery and help management more effectively identify and manage undelivered and partially delivered routes.

As the Postal Service moves forward with its technological solutions for identifying delayed mail and undelivered and partially delivered routes, it has a unique opportunity to leverage existing tools used to notify customers of mail delays due to weather and safety concerns. Data on delayed mail and undelivered and partially delivered routes could be incorporated into these tools to notify customers of delays and service outages in near real-time. Notification of service interruptions is important for informing customers and providing world-class, universal mail service.

> **Recommendation #1**
> We recommend the **Vice President, Delivery Operations**, finalize system enhancements to identify undelivered and partially delivered routes.

> **Recommendation #2**
> We recommend the **Vice President, Delivery Operations**, enhance processes and tools to notify customers of delayed mail and undelivered and partially delivered routes.

Management's Comments

Management agreed with the finding and recommendation 1 and disagreed with recommendation 2.

Regarding recommendation 1, management stated they will continue to work together to finalize system enhancements to identify, address, minimize and improve performance concerning undelivered and partially delivered routes. The Insights and Operational Excellence team will work with feedback and input from the Delivery team to ensure that there is an iterative process for improving visibility. The target implementation date is May 31, 2023.

Regarding recommendation 2, management stated with a continually increasing delivery network of more than 163 million delivery points, notification to customers of delayed mail, or undelivered/partially delivered routes would require the development of a technological infrastructure far beyond existing Postal Service operational scope and purpose. Management also noted that Informed Delivery® provides notifications for mailpieces arriving soon, but not necessarily mailpieces arriving that same day. With the large volume of mail moving through their network each day, they do not believe it is feasible to trace a single piece of letter-sized mail.

See Appendix C for management's comments in their entirety.

Evaluation of Management's Comments

The OIG considers management's comments responsive to recommendation 1 and non-responsive to recommendation 2. The corrective actions for recommendation 1 should resolve the issue identified in the report.

Regarding recommendation 2, we believe that the Postal Service has a unique opportunity to leverage their existing technological infrastructure already in use for notifying customers of mail and packages scheduled for delivery. As discussed in our report, such technology could be used to notify customers of delayed mail and undelivered and partially delivered routes to inform customers and provide world-class, universal mail service.

All recommendations require OIG concurrence before closure. We view the response to recommendation 2 as non-responsive and will pursue through the resolution process. The OIG requests written confirmation when corrective actions are completed. Recommendations should not be closed in the Postal Service's follow-up tracking system until the OIG provides written confirmation that the recommendations can be closed.

Appendices

Appendix A: Additional Information

Scope and Methodology

The scope of this audit was nationwide undelivered and partially delivered Postal Service routes from FY 2021 through FY 2022, Quarter 2. To accomplish our objective we:

- Judgmentally selected 12 delivery units based on the average non-delivery percentage from August 2021 through January 2022 using data from NDI. We categorized delivery units based on route type and selected three units from each of the four areas based on the highest non-delivery percentage in each category.

- Reviewed and analyzed NDI data to identify instances of routes not delivered from mid-July 2019 to October 31, 2022.

- Interviewed Postal Service management at headquarters, area, district, and delivery units to identify the practices and policies used to manage undelivered and partially delivered routes.

- Reviewed prior OIG audit work from FYs 2021 and 2022.

- Obtained and reviewed applicable laws, policies, procedures, and relevant guidance related to the management of undelivered and partially delivered routes.

We conducted this audit from October 2021 through December 2022 in accordance with generally accepted government auditing standards and included tests of internal controls as we considered necessary under the circumstances. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our finding and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our finding and conclusions based on our audit objective. We discussed our observations and conclusions with management on November 18, 2022, and included their comments where appropriate.

We assessed the reliability of data in NDI, CSDRS, Non-Delivery Survey, and DCV by interviewing agency officials knowledgeable about the data and conducting logical tests on the data. We determined that this data was sufficiently reliable for the purposes of this report.

Prior Audit Coverage

The OIG did not identify any prior audits or reviews related to the objective of this audit within the last five years.

Appendix B: OIG Audits Showing Under Reported Delayed Mailpieces

Number of Units Reviewed in Report	Report Name	Report Number	Date Issued	Number of Delayed Mailpieces Identified by OIG	Number of Delayed Mailpieces Reported by Units in CSDRS	Under Reported Delayed Mailpieces
4	Mail Delivery, Customer Service, and Property Conditions Review - Select Units, Albuquerque and Santa Fe, NM	22-132-R22	9/20/22	24,953	8,704	16,249
4	Mail Delivery, Customer Service, and Property Conditions Review – Select Units, St. Louis, MO Region	22-115-R22	8/31/22	5,145	1,631	3,514
3	Mail Delivery, Customer Service, and Property Conditions Review - Select Units, Indianapolis, IN Region	22-091-R22	6/22/22	2,023	1,148	875
1	Mail Delivery, Customer Service, and Property Conditions Review – East City Annex, Columbus, OH	22-044-R22	3/16/22	5,348	0	5,348
1	Mail Delivery, Customer Service, and Property Conditions Review – South Columbus Station, Columbus, OH	22-043-R22	3/16/22	34,561	9,121	25,440
2	Mail Delivery and Customer Service Operations – Ashford West and Westbury Stations, Houston, TX	21-233-R22	12/6/21	9,025	0	9,025
9	Mail Delivery and Customer Service Operations – Select Baltimore Units Baltimore, MD	21-194-R22	11/4/21	972,457	200,817	771,640
1	Mail Delivery and Customer Service Operations – Newark Post Office, Newark, DE	21-177-R21	7/22/21	41,904	0	41,904
1	Mail Delivery and Customer Service Issues – Olathe East Branch, Olathe, KS	21-121-R21	5/5/21	1,773	0	1,773
1	Mail Delivery and Customer Service Operations – Castle Rock Main Post Office, Castle Rock, CO	21-122-R21	4/28/21	1,662	1,209	453
1	Mail Delivery and Customer Service Operations – Southwest Station, Washington, D.C.	21-088-R21	4/12/21	5,132	0	5,132
1	Mail Delivery and Customer Service Operations – Holiday City Station, Memphis, TN	21-089-R21	3/16/21	2,487	0	2,487

Number of Units Reviewed in Report	Report Name	Report Number	Date Issued	Number of Delayed Mailpieces Identified by OIG	Number of Delayed Mailpieces Reported by Units in CSDRS	Under Reported Delayed Mailpieces
4	*Mail Delivery and Customer Service Issues – Selected Chicago Stations, Chicago, IL*	20-296-R21	2/1/21	62,866	3,114	59,752
1	*Mail Delivery and Customer Service Operations – Avent Ferry Station, Raleigh, NC*	21-009-R21	1/19/21	6,230	6200	30
34				**1,175,566**	**231,944**	**943,622**

Source: Analysis of OIG audit reports issued from October 1, 2020 through September 30, 2022.

Appendix C: Management's Comments

VICE PRESIDENT, DELIVERY OPERATIONS
HEADQUARTERS

UNITED STATES
POSTAL SERVICE

December 13, 2022

JOHN CIHOTA
DIRECTOR, AUDIT SERVICES

SUBJECT: Management Response - Delivery Operations – Undelivered and
Partially Delivered Routes Project Number 21-262-DRAFT

Thank you for the opportunity to review and comment on the Office of Inspector
General's (OIG's) audit: *Delivery Operations – Undelivered and Partially Delivered
Routes*.

Our mission is to show up and deliver in a professional, efficient, trusted and visible
manner.

We have performance expectations, actionable metrics and appropriate ownership
of the work performed and service provided for every employee, supervisor,
manager and leader.

We seek continuous improvement in all actions, tasks and efforts to include the
leveraging of existing tools and technologies as well as the development of new
ones to enhance delivery operations in all aspects. It must be noted that all tools
listed in this report: Delivery Condition Visualization (DCV); Non-Delivery Survey;
Mail Rotation Dashboard; Daily Triangulation Report; National Delivery Indicator
(NDI) are relatively new; none of these existed before June 2021 and exemplify our
determinations. In alignment with the Delivering for America (DFA) plan, we aim for
a modernized postal service capable of providing world class service reliability at
affordable prices with innovation that grows revenue and meets changing
marketplace needs.

Recommendation 1: We recommend the Vice President, Delivery Operations,
finalize system enhancements to identify undelivered and partially delivered routes.

Management Plans/Actions: We agree that Delivery & Insights and Operational
Excellence will continue to work together to finalize system enhancements to
identify, address, minimize and improve performance concerning undelivered and
partially delivered routes, as this has been on going. The Insights and Operational
Excellence team will work with feedback and input from the delivery team to ensure
that there is an iterative process for improving visibility.

475 L'ENFANT PLAZA SW
WASHINGTON DC 20260

Target Implementation Date: May 31, 2023

Responsible Officials: Director of City Delivery &
Executive Director, Insights and Operational Excellence.

Recommendation 2: We recommend the Vice President, Delivery Operations, enhance processes and tools to notify customers of delayed mail and undelivered and partially delivered routes.

Management Plans/Actions: With a continually increasing delivery network of more than 163M delivery points, we cannot agree with this recommendation. To notify customers of delayed mail, or undelivered/partially delivered routes requires the development of a technological infrastructure far beyond existing USPS operational scope and purpose.

Currently, Informed Delivery® provides notifications for mailpieces arriving soon - not necessarily mailpieces arriving that same day. With the large volume of mail moving through our network each day, it is not feasible to trace a single piece of letter-sized mail. With the Informed Delivery feature, there is an option to report instances for customers, who've received an image of a mailpiece, however, the physical mailpiece has not arrived in their mailbox. Users can click the checkbox under the specific image in their dashboard to indicate that a mailpiece was not received. This information is routed to the U.S. Postal Inspection Service (USPIS) and/or the Office of Inspector General (OIG) for investigative purposes.

Source:
Informed Delivery® Privacy & Security Concerns (force.com)
https://usps.force.com/faq/s/article/Informed-Delivery-Privacy-Security-Concerns?r=343&ui-knowledge-components-aura-actions.KnowledgeArticleVersionCreateDraftFromOnlineAction.createDraftFromOnlineArticle=1

Target Implementation Date: N/A

Responsible Official: N/A

E-SIGNED by ANGELA H CURTIS
on 2022-12-13 14:55:20 CST
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Angela H. Curtis

cc: *Corporate Audit Response Management*

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