

Region 6 - Enforcement & Compliance Assurance Division

INSPECTION REPORT

Inspection Date(s):	06/22-24/2021	
Media Program:	Air	
Regulatory Program(s)	RMP	
Company Name:	The Goodyear Tire & Rubber Company	
Facility Name:	Goodyear Houston Chemical Plant	
Facility Physical Location:	2000 Goodyear Drive	
(city, state, zip code)	Houston, Texas, 77017	
Mailing address:	2000 Goodyear Drive	
(city, state, zip code)	Houston, Texas, 77017	
County/Parish:	Harris County	
Facility Phone Number	(713) 477-8801	
Facility Contact:	Tom Baldauf	Manufacturing Director
	tom_baldauf@goodyear.com	
FRS Number:	110000462231	
Identification/Permit Number:	Air Operating Permit ID: O1227	
Media Identifier Number:	RMP: 100000077347	
NAICS:	325212	
SIC:	2822	
Personnel participating in inspection:		
Tom Baldauf	The Goodyear Tire & Rubber Company	Manufacturing Director
Stephanie Salazar	The Goodyear Tire & Rubber Company	Chemical Division PSM Technical Team Lead
Elena Voronovich	The Goodyear Tire & Rubber Company	PSM Engineer
Darren Tanner	The Goodyear Tire & Rubber Company	Technology Manager
John Belbas	The Goodyear Tire & Rubber Company	Technical Manager
Helen Watson	The Goodyear Tire & Rubber Company	Production Safety Coordinator
Ronnie Householder	The Goodyear Tire & Rubber Company	Craft Safety Coordinator
EPA Lead Inspector Signature/Date		8/25/2021
	Kayla Buchanan	Date
Supervisor Signature/Date		8/30/2021
	Samuel Tates	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

U.S. Environmental Protection Agency (EPA) Region 6 Inspectors Kayla Buchanan and Charese Simpson (EPA) arrived at Goodyear Houston Chemical Plant (Goodyear Houston) for an announced inspection at 9:00 a.m. on June 22, 2021. The inspection was prompted by a regional priority. EPA convened an opening conference and met with several representatives from the facility (*see Appendix 1*). I, Kayla Buchanan, presented my credentials to the opening conference attendees and informed them that this was an EPA inspection to determine Goodyear Houston's compliance with the Clean Air Act (CAA) Sections 112(r)(1) and 112(r)(7).

FACILITY DESCRIPTION

Goodyear Houston, located at 2000 Goodyear Drive, Houston, Texas 77017, was built in 1943 by the U.S. government to produce synthetic rubber. After World War II, The Goodyear Tire & Rubber Co. purchased the Houston plant from the government. Goodyear Houston manufactures synthetic rubber at the facility. To produce it, two petrochemicals, butadiene and styrene, are reacted with several chemical agents in a soap and water solution. The temperature of the reaction is controlled by anhydrous ammonia. Approximately 293 fulltime employees work onsite. There are four unions representing five groups of associates, 1 Operations and 4 Crafts: International Union of Operating Engineers, United Association of Journeymen and Apprentices of Plumbing and Pipefitting Industry, International Association of Machinists and Aerospace Workers, and Sheet Metal Workers International Association.

Section II – OBSERVATIONS

On June 23, 2021 EPA participated in a driving tour of the Goodyear Houston facility. Goodyear Houston employees Stephanie Salazar (Chemical Division PSM Technical Team Lead), Elena Voronovich (PSM Engineer), Darren Tanner (Technology Manager), and Helen Watson (Production Safety Coordinator) accompanied us. EPA observed the covered processes, equipment, operations, control rooms, and emergency equipment. EPA interviewed operators and asked questions about their training, the Management of Change (MOC) and Process Hazard Analysis (PHA) processes, and the facility's regular operating and emergency procedures.

40 C.F.R. Part 68 – CHEMICAL ACCIDENT PREVENTION PROVISIONS

Subpart A – General

40 C.F.R. § 68.10 Applicability – Goodyear Houston is a Title V stationary source that has an air operating permit and more than the threshold quantities of regulated substances (toxic and flammable) in its process streams; therefore, these regulations are applicable. Goodyear Houston re-submitted a Risk Management Plan (RMP) on January 9, 2018, which describes the processes containing regulated chemicals stored at more than threshold quantities. In addition, this facility is subject to the Occupational Safety and Health Administration's (OSHA) Process Safety Management (PSM) Standard (29 CFR 1910.119), categorizing them as a Program 3 facility.

40 C.F.R. § 68.12 General requirements – I reviewed the re-submission of the Goodyear Houston RMP, which they submitted on January 9, 2018. It listed the toxic and flammable chemicals for its Program 3 processes.

40 C.F.R. § 68.15 Management - I reviewed the management system implemented at Goodyear Houston that oversees the implementation of the Risk Management Program elements. The facility has assigned a qualified person or position that has the overall responsibility for the development, implementation, and integration of the elements.

Subpart B – Hazard Assessment

40 C.F.R. § 68.20 Applicability - Goodyear Houston is a Program 3 stationary source subject to this subpart; therefore, it is required to prepare a worst-case release scenario analysis and complete the five-year accident history.

40 C.F.R. § 68.22 Offsite Consequence Analysis Parameters – Goodyear Houston employed the parameters specified by EPA in this rule by using the RMP*Comp™ software. I reviewed the offsite consequence analysis and supporting documentation to assure the data was accurate and correct.

40 C.F.R. § 68.25 Worse-case release scenario analysis - Goodyear Houston identified and analyzed at least one worst-case scenario for each toxic and flammable substance in its Program 3 processes using the RMP* Comp™ software, thus meeting the requirements of the regulation.

40 C.F.R. § 68.28 Alternative Release Scenario Analysis - Goodyear Houston identified and analyzed at least one alternative release scenario for each toxic and flammable substance in its Program 3 processes using the RMP* Comp™ software, thus meeting the requirements of the regulation.

40 C.F.R. § 68.30 Defining offsite impacts- Population - Goodyear Houston used the most current (2010) Census Bureau population data and the distances to endpoints, as specified in the regulation, to calculate the population numbers reported in their RMP. Goodyear Houston used MARPLOT to define the population surrounding the facility. In addition, Goodyear Houston provided a Google Earth image documenting the nearest public receptor.

40 C.F.R. § 68.33 Defining offsite impacts- Environment - Goodyear Houston used US Geological Survey maps data to determine the environmental receptors and the distances to endpoints.

40 C.F.R. § 68.36 Review and Update – Goodyear Houston stated that the offsite consequence analyses were updated every five years, as required by this subpart.

40 C.F.R. § 68.39 Documentation- Goodyear Houston maintained records of the offsite consequence analyses in accordance with this subpart. These records included:

- documentation of vessels or pipelines;
- substances selected for worse case and alternative release scenarios;
- documentation of estimated quantity released, release rate, and duration of release;

- methodology used to determine distance to endpoint; and,
- data used to estimate population and environmental receptors.

40 C.F.R. § 68.42 Five-year accident history- Goodyear Houston is required to report any accidental releases from its covered processes that resulted in deaths, injuries, significant property damage on site, known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage in its five-year accident history. Goodyear Houston reported several releases in its five-year accident history, but none of the releases met the criteria for inclusion. I reminded Goodyear Houston of the criteria and informed them that the release reported did not meet it.

I examined Goodyear Houston's OSHA Form 300 logs from 2016 to present and queried the National Response Center (NRC) database to ensure that additional releases from the facility which could possibly be included in the facility's five-year accident history were not omitted.

40 C.F.R. § 68.65 Process safety information (PSI) - EPA reviewed Goodyear Houston's PSI. The compilation of written process safety information included: information pertaining to the hazards of the regulated substances used or produced by the process; information pertaining to the technology of the process; and information pertaining to the equipment of the process.

EPA reviewed PSI for all process units, including process chemistry, as well as, the safe upper and lower limits and consequences of deviation from the limits for these units. EPA reviewed selected design codes and standards employed at the facility and documentation that the process equipment complies with recognized and generally accepted good engineering practices (RAGAGEP).

40 C.F.R. § 68.67 Process hazard analysis (PHA) – EPA reviewed Goodyear Houston's PHA process. Goodyear Houston performed initial PHAs on processes covered by this part and maintained previously revalidated PHAs every five years after the initial completion dates. The facility utilizes its semi-quantitative hazard and operability (HAZOP) methodology leading into a Layer of Protection Analysis (LOPA) to conduct its PHAs.

The PHAs reviewed addressed: (1) the hazards of the process; (2) the identification of any previous incident, which had a likely potential for catastrophic consequences; (3) engineering and administrative controls applicable to the hazards and their interrelationships; and, (4) consequences of failure of engineering and administrative controls.

The PHAs were performed by a team with expertise in engineering and process operations. The team included at least one employee who had experience and knowledge that was specific to the process being evaluated and one employee who was knowledgeable in the specific PHA methodology used.

Goodyear Houston established a system utilizing its Compliant Pro software to promptly address the team's findings and recommendations, to assure the recommendations were implemented in a timely manner, and to ensure that the resolutions were documented. The facility also developed a written schedule for action completion. They communicated the actions to operations, maintenance, and other employees, whose work assignments are within the process and who may be affected by action

recommendations.

40 C.F.R. § 68.69 Operating Procedures – EPA reviewed the following Goodyear Houston operating procedures: startup of a chain reactor, latex recovery operations, tank farm emergency shutdown and loss of operations, and scheduled and temporary shutdown for a chain reactor. The operating procedures EPA reviewed addressed: the steps for each of the operating phases; the consequences of deviation and mechanisms to correct and/or avoid deviation; safety and health considerations; the properties of, and hazards presented by, chemicals used in the process; the precautions necessary to prevent exposure; quality control for raw materials; and, the safety systems and their functions.

EPA also reviewed Goodyear Houston's safe work procedures, including lock out/tag out, hot work, electrical safety, and safe confined space entry procedures.

Goodyear Houston's operating procedures were accessible to employees via the company's shared drive, as well as, the facility's Compliant Pro Software. While on the facility site tour, EPA requested randomly selected process operators to dictate, as well as demonstrate how to access the operating procedures. All selected process operators were knowledgeable about the various ways to access the procedures.

Goodyear Houston is required to annually certify that operating procedures are current and accurate. EPA reviewed the operating procedure certifications for the past five years. Goodyear Houston stated its 2017 annual certification documentation was lost during Hurricane Harvey. Its 2020 certification was 4 months overdue (**Appendix 2**) (**AOC #1**).

40 C.F.R. § 68.71 Training – EPA reviewed Goodyear Houston's training program and employee training records. The subpart requires that each employee presently operating a covered process and each employee newly assigned to a covered process be trained or tested to qualify as competent in an overview of the process and in the operating procedures that pertain to their duties. The training must include an emphasis on specific health and safety hazards, emergency operations, and safe work practices. Refresher training must be administered every three years.

To meet these training requirements, Goodyear Houston requires new employees to complete a new hire orientation. New operators are trained in a health and safety and process overview via computer-based trainings (CBTs). Operators then complete on the job training. Upon successful completion, operators receive a Performance Checklist (PCL) that signals certification in the operator's current job assignment.

EPA reviewed training records for randomly selected employees to ensure that initial training was documented and that each employee involved in covered operations received and understood the training. Goodyear Houston maintained paper copies and electronic records of training as documentation. Goodyear Houston stated that employees must complete refresher training every three years based on the date an employee successfully completes a PCL. EPA could not determine from the documentation if refresher training was administered every three years (**Appendix 3**) (**AOC #2**).

40 C.F.R. § 68.73 Mechanical Integrity – EPA reviewed the written procedures for Goodyear Houston’s mechanical integrity program. Goodyear Houston’s mechanical integrity program follows the American Petroleum Institute’s (API) 570 Inspection method. EPA reviewed mechanical integrity inspection documentation for piping, tanks, reactors, and relief valves. I also reviewed preventative maintenance records for several butadiene compressors and pumps. The documentation identified the date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test. Goodyear Houston has a deferral process that can be utilized to extend the due date for a mechanical integrity inspection or test.

Goodyear Houston’s contracts mechanical integrity staff. The lead inspector who is ultimately responsible for mechanical integrity inspections was trained in an overview of the covered fixed equipment process, its hazards, and in the procedures applicable to employee job tasks.

40 C.F.R. § 68.75 Management of Change (MOC) – EPA reviewed Goodyear Houston’s Management of Change Policy and various MOCs. The written MOC procedure assured the facility managed changes to process chemicals, technology, equipment, procedures, and changes to stationary sources that effect a covered process. The procedure assured that the following considerations were addressed prior to any change: technical basis for change, impact of change on safety and health, modifications to operating procedures, necessary time period for the change, and authorization requirements for a proposed change.

The facility ensured that Goodyear Houston and contract employees involved in operating and maintaining a covered process and whose jobs will be affected by a change are informed of, and trained in, the change prior to startup of an affected part of the process. At minimum, a computer-based awareness training must be completed. For each MOC I reviewed, I also reviewed the training records for randomly selected employees associated with the required training generated from that MOC.

If a change resulted in a change to safety information, this subpart requires such information be updated accordingly. I reviewed several MOCs that required such a change and the information had been updated, as required by the regulation.

40 C.F.R. § 68.77 Pre-startup review (PSSR) – I reviewed Goodyear Houston’s written PSSR procedures, as well as various PSSRs completed by the facility within the past five years. The PSSRs reviewed confirmed that, prior to the introduction of a regulated substance into the process, the construction and equipment design were completed in accordance with design specifications, required safety, operating, and maintenance procedures, and with adequate emergency procedures in place. The PSSRs also ensured that training of each employee involved in operating a process was completed.

40 C.F.R. § 68.79 Compliance audits – EPA reviewed Goodyear Houston’s two most recent compliance audits, which were conducted in October 2017 and September 2020. The facility’s audits were conducted by a 3rd party. Goodyear Houston certified that the compliance audits evaluated compliance with the provisions of this subpart at least every three years to verify that procedures and practices developed under this subpart are adequate and are being followed. Goodyear Houston’s compliance

audits were conducted by at least one person knowledgeable in the processes and they developed a report of the audit findings.

Goodyear Houston is required to determine and document an appropriate response to each of the findings of the compliance audits and document that deficiencies were corrected; however, several of the 2017 compliance audit findings were closed but not resolved. Goodyear switched from documenting compliance audit findings in Lotus Notes to the Compliant Pro software. During this transition, some audit items were closed without proper resolution. Specifically, a recommendation stated, “document and organize refresher/recertification records for operators...such that they are retrievable.” EPA discovered during this inspection that this recommendation wasn’t resolved. One of the 2017 compliance audit findings was found again because of the 2020 compliance audit (**Appendix 4, 5) (AOC #3)**).

40 C.F.R. § 68.81 Incident investigation – Goodyear Houston is required to investigate each incident, which resulted in or could reasonably have resulted in a catastrophic release of a regulated substance. According to the facility, no such incidents occurred within the past five years. EPA reviewed Goodyear Houston’s incident investigation procedure to ensure that if such an incident occurred, the facility would initiate the investigation, prepare the report, and document, correct, and communicate the incident investigation findings according to the RMP regulations.

40 C.F.R. § 68.85 Hot work permit – EPA reviewed hot work permits issued by Goodyear Houston. Each permit that EPA reviewed documented that fire prevention and protection requirements were implemented prior to beginning hot work operations. The permits indicated the dates authorized for hot work and identified the object on which the hot work was performed.

40 C.F.R. § 68.87 Contractors – EPA reviewed Goodyear Houston’s contractor procedure. The facility utilizes the Avetta online system as an initial screening tool for contractors.

Contractors receive training through the Houston Area Safety Council, as well as, from Goodyear Houston. Goodyear Houston provides contractors an additional safety orientation when they come onsite. The safety orientation encompasses training about specific hazards in the process unit the contractor will be performing work in.

Subpart E- Emergency Response

40 C.F.R. § 68.90 Applicability- Goodyear Houston has employee first responders that respond to fires and releases on site.

40 C.F.R. § 68.95 Emergency response program- Goodyear Houston maintains an Emergency Response Team (ERT) comprised of employees trained to assist in responses to an emergency. They are required to have medical, rescue, hazardous materials (“HAZMAT”), and fire training. EPA reviewed emergency response training records for randomly selected employees on the ERT.

EPA reviewed Goodyear Houston’s emergency response plan. The plan included: procedures for

informing the public and local emergency response agencies about accidental releases, documentation of proper first aid and emergency medical treatment necessary to treat accidental human exposures, and procedures and measures for emergency response after an accidental release of a regulated substance; however, the plan did not include procedures for the use of emergency response equipment, and for its inspection, testing, and maintenance. **(Appendix 6) (AOC #4)**

Goodyear Houston is a part of the Channel Industrial Mutual Aid (CIMA).

Subpart G- Risk Management Plan

40 C.F.R. § 68.190 Updates- Goodyear Houston resubmitted its RMP on January 9, 2018.

40 C.F.R. § 68.195 Required corrections- Prior to coming onsite, EPA was unable to contact the facility via its facility number nor its emergency contact information. The current person listed as the emergency employee has retired. **(AOC #5)**. Goodyear Houston must update its RMP to accurately reflect its emergency contact, as required by 40 CFR § 68.190 and 40 CFR § 68.195. Goodyear Houston's next RMP re-submission is due by January 9, 2023.

Section III – AREAS OF CONCERN

1. **40 C.F.R. § 68.69 (c)** requires Goodyear Houston to annually certify that its operating procedures are current and accurate. Goodyear Houston lost its 2017 certification, and its 2020 certification was 4 months overdue.
2. **40 C.F.R. § 68.71 (a) and (b)** requires each Goodyear employee presently involved in operating a process and each employee before being involved in operating a newly assigned process, shall be trained in an overview of the process and in the operating procedures; Goodyear Houston must provide refresher training at least every three years to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process. Goodyear did not document that refresher training was administered every three years or that initial training was provided.
3. **40 C.F.R. § 68.79 (d)** requires Goodyear Houston to promptly determine and document an appropriate response to each of the findings of the compliance audit and document that deficiencies have been corrected. Several of Goodyear Houston's 2017 compliance audit findings were closed but an appropriate response was not documented. One of the 2017 compliance audit findings was found again because of the 2020 compliance audit.
4. **40 C.F.R. § 68.95 (a)(2)** requires Goodyear Houston to maintain an emergency response plan that has procedures for the use of emergency response equipment and for its inspection, testing, and maintenance. Goodyear Houston's emergency response plan did not include procedures for the use of emergency response equipment and for its inspection, testing, and maintenance
5. **40 C.F.R. § 68.195** requires Goodyear Houston to submit a correction of its emergency contact information within one month of any change. Prior to coming onsite, EPA was unable to contact

the facility via its facility number nor its emergency contact information. The current person listed as the emergency employee has retired.

EPA Region 6 inspectors Kayla Buchanan and Charese Simpson conducted a closing conference for the inspection at Goodyear Houston at 4:00 pm on June 25, 2021. During the closing conference, EPA reviewed the five Areas of Concern noted during the inspection. EPA provided Goodyear Houston with a list of all records collected during the inspection.

Section IV – FOLLOW UP

No additional information was received by EPA after exiting the Facility on June 25, 2021.

Section V – LIST OF APPENDICES

- Appendix 1 – Opening and Closing Attendance Sheet*
- Appendix 2 – Annual Operating Procedures Certifications
- Appendix 3 – Training Records for Various Employees
- Appendix 4 – 2017 Compliance Audit Action Items
- Appendix 5 – 2020 Compliance Audit Action Items
- Appendix 6 – Emergency Response Procedures

*Only appendix 1 is included in the online version of this report

APPENDIX 1

Opening Conf.	Closing Conf.	 Meeting with: Goodyear Houston Plant Purpose of meeting: Clean Air Act 112(r) & 40 CFR Part 68 Virtual PCE				Dates of Inspection/Meeting: 22-Jun-21	
		Name	Title	Representing	e-Mail	Phone	
1		Kayla Buchanan	Lead Inspector	EPA Region 6	buchanan.kayla@epa.gov	214-665-6480	
2		Charese Simpson	Inspector	EPA Region 6	simpson.charese@epa.gov	214-665-6623	
3		John Belbas	Technical Manager	Goodyear	John-Belbas@Goodyear.com	713 475 7611	
4		DARREN TANNER	TECHNOLOGY MANAGER	GOODYEAR	DARREN.TANNER@Goodyear.com	713 475 5433	
5		TOM BALDAUF	MANUFACTURING DIRECTOR	GOODYEAR	tom-baldauf@goodyear.com	713-475-5401	
6		Elena Voronovich	PSM Engineer	Goodyear	elena.voronovich@goodyear.com	713-540-6111	
7		Helen Watson	Production Safety Control	Goodyear	helen-watson@goodyear.com	713-475-5439	
8		Ronnie Householder	Craft Safety Coordinator	Goodyear	ronnie.householder@goodyear.com	713-475-5309	
9		Stephanie Salazar	Chem Div PSM TL	Goodyear	stephanie_salazar@goodyear.com	713-475-7613	
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