FISCAL AND REGULATORY IMPACT ANALYSIS FOR INCORPORATION OF UPDATED NATIONAL SAFETY STANDARDS AND FEE CHANGES FOR CERTAIN NC DEPARMENT OF LABOR BOILER AND PRESSURE VESSEL RULES PURSUANT TO THE North Carolina Uniform Boiler and Pressure Vessel Act

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Rules related to:

NC Department of Labor, Standards and Inspection Division, Boiler Safety Bureau ("Bureau")

Rules Proposed for Amendment

Title: CHAPTER 13 –Boiler :

13 NCAC 13 .0101 DEFINITIONS
13 NCAC 13 .0103 INCORPORATED – STANDARDS
13 NCAC 13. 0201 NAME: ADDRESS
13 NCAC 13 .0202 INSPECTOR QUALIFICATION
13 NCAC 13 .0203 NORTH CAROLINA COMMISSION
13 NCAC 13 .0205 OWNER-USER INSPECTION ORGANIZATION
13 NCAC 13 .0207 INSPECTION REPORTS
13 NCAC 13 .0210 SHOP INSPECTIONS AND NATIONAL BOARD "R" CERTIFICATE QUALIFICATION REVIEWS
13 NCAC 13 .0211 CERTIFICATE INSPECTIONS
13 NCAC 13 .0213 CERTIFICATE AND INSPECTION FEES
13 NCAC 13 .0214 EXTENDED PRESSURE EQUIPMENT OPERATING CERTIFICATES

13 NCAC 13 .0303 INSPECTIONS REVEALING DEFICIENCIES
13 NCAC 13 .0401 DESIGN AND CONSTRUCTION STANDARDS
13 NCAC 13 .0402 NORTH CAROLINA STAMPING AND REGISTRATION
13 NCAC 13 .0405 PRESSURE RELIEF DEVICES
13 NCAC 13 .0406 HIGH PRESSURE OR TEMPERATURE LIMIT CONTROL
13 NCAC 13 .0409 AUTOMATIC LOW-WATER FUEL CUTOFF CONTROLS AND WATER- FEEDING DEVICES
13 NCAC 13 .0420 FIRING MECHANISM CONTROLS
13 NCAC 13 .0422 EXHIBITION BOILERS
13 NCAC 13 .0423 MODEL HOBBY BOILERS
13 NCAC 13 .0701 STANDARDS

Appendices:

Appendix A1: Proposed Text for Definitions - 13 NCAC 13 .0101
Appendix A2: Proposed Text for Incorporated Standards - 13 NCAC 13 .0103
Appendix A3: Proposed Text for Name: Address - 13 NCAC 13. 0201
Appendix A4: Proposed Text for Inspector Qualification - 13 NCAC 13 .0202
Appendix A5: Proposed Text for North Carolina Commission - 13 NCAC 13 .0203
Appendix A6: Proposed Text for Owner-User Inspection Organization -13 NCAC 13 .0205
Appendix A7: Proposed Text for Inspection Reports - 13 NCAC 13 .0207
Appendix A8: Proposed Text for Shop Inspections and National Board “R” Qualifications Reviews - 13 NCAC 13 .0210
Appendix A9: Proposed Text for Certificate Inspections - 13 NCAC 13 .0211
Appendix A10: Proposed Text for Certificate and Inspection Fees - 13 NCAC 13 .0213
Appendix A11: Proposed Text for Extended Pressure Equipment Operating Certificates - 13 NCAC 13 .0214
Appendix A12: Proposed Text for Inspections Revealing Deficiencies - 13 NCAC 13 .0303
Appendix A13: Proposed Text for Design and Construction Standards - 13 NCAC 13 .0401
Appendix A14: Proposed Text for North Carolina Stamping and Registration - 13 NCAC 13 .0402
Appendix A15: Proposed Text for Pressure Relief Devices - 13 NCAC 13 .0405
Appendix A16: Proposed Text for High Pressure or Temperature Limit Control - 13 NCAC 13 .0406
Appendix A17: Proposed Text for Automatic Low-Water Fuel Cutoff Controls and Water-Feeding Devices - 13 NCAC 13 .0409
Appendix A18: Proposed Text for Firing Mechanism Controls - 13 NCAC 13 .0420

Appendix A19: Proposed Text for Exhibition Boilers - 13 NCAC 13 .0422
Appendix A20: Proposed Text for Model Hobby Boilers - 13 NCAC 13 .0423
Appendix A21: Proposed Text for Standards - 13 NCAC 13 .0701

Appendix B: Information and summary of prior fee and rule changes since 2006

Impact:

State Impact: Yes
Local Impact: Yes
Private Impact: Yes
Substantial Economic Impact: **No** (Not over $1,000,000.00)

Statutory Authority: NCGS §§ 95-69.8 – 95-69.29 and 95.69.30

Uniform Boiler and Pressure Vessel Act, Chapter 95, Article 7A

NCGS § § 95-69.8 through 95-69.20

Historical Boilers, Chapter 95, Article 7B

NCGS § 95-69.30 Safety Program for Operators and Apprentices

I. EXECUTIVE SUMMARY

The NC Department of Labor ("NCDOL") has the responsibility to "best serve the public interest in the safe operation of boilers and pressure vessels" and enforce the laws under the Uniform Boiler and Pressure Vessel Act. Periodically, the administrative rules outlining the technical standards and requirement of Boiler and Pressure device users and manufacturers and fee structure related to those device inspections are updated. This fiscal note outlines those necessary changes and impact of these changes.

NCDOL is proposing to increase select boiler inspection fees to address anticipated budget shortfalls caused by ongoing increased operating costs (as the last fee increase was over five (5) years ago, the unanticipated impact from COVID-19, and anticipated future funding of a necessary replacement for the inspection tracking and billing system. NCDOL is increasing minimal penalties to $50 so that the agency may participate in the NC Department of Revenue Debt Setoff program, which allows NCDOR to capture any tax refund and send the portion that is the debt owed to NCDOL. The Boiler Safety Bureau ("Bureau") is a wholly receipt-funded bureau within the agency.

The increase on lower tier fees is necessary for a variety of reasons list below and are discussed in greater detail in the ensuing narrative. These reasons include:

- Increased labor costs since last fee increase
- Increased travel distance and costs since last fee increase
- Inability to participate in Setoff Debt Collection provided by NCDOR for debts less than $50.00: Debt Setoff Unit | NCDOR
- Ability to retain and train technical workforce
- Improve data inspection and billing system
- Increased vulnerability of inspections and issuance of certifications due to unforeseen circumstances (e.g., COVID 19) and increased dependency on insurance inspections.

The proposed fee increases on the lower tier fees will provide approximately $540,000 annually to the Bureau. These additional costs will predominantly be borne by the private sector (approximately $450,000), but also to a smaller degree will affect State Government (approximately $38,000) and Local Governments (approximately $58,000). Rate increases and their impact on businesses is taken seriously by the NC Department of Labor and has infrequently raised fees historically, and only raises fees to when financial need of the Boiler and Safety Bureau necessitates them. The proposed fee increases will sustain the Bureau for approximately five to six years.

NCDOL is also proposing amendments to update terminology and incorporate by reference updated industry standards. These changes are not expected to significantly affect boiler construction, operation, or inspections because owners and operators are required to comply with the most recent standards. However, bringing the rule language up to date with the current requirements will increase transparency and save time for both regulated entities and the Bureau.

Technical and terminology changes to rules will have very little fiscal impact on either private or government entities. In many instances updating NCAC to match national standards will provide a time savings to businesses as this will reduce the number of exception requests processed by the Bureau.

For a complete summary of fiscal impacts please refer to the detail provided in section IV of this fiscal note.

II. STATUTORY AUTHORITY FOR INSPECTIONS AND FEE ESTABLISHMENT

The NCDOL has statutory authority pursuant to the Uniform Boiler and Pressure Vessel Act, Article 7A, and Historical Boilers, Article 7B of Chapter 95 of the NC General Statutes, to inspect boilers and pressure vessels in the State of North Carolina and to regulate the construction, operation, and use of boilers and pressure vessels, to include historical boilers.

Pursuant to NCGS § 95-69.11 of the Uniform Boiler and Pressure Vessel Act, the Commissioner of Labor is empowered to establish reasonable fees for the inspection and issuance of inspection certificates for boilers and pressure vessels that are in use, and to establish reasonable fees for the examination and certification of inspectors.

See **Appendix B,** which contains Tables I and II, for additional information and summary of prior fee and rule changes since 2006.

III. PROPOSED FEE AND RULE CHANGES

A. **Adjustment of Fees for Select Boiler and Pressure Vessel Devices -13 NCAC 13.0205, 13,0213, and 13.0303**

(Appendix A6, A10, A12 Respectively)

Currently, the inspection fees of applicable devices vary. The Uniform Boiler and Pressure Vessel Act does not establish any minimum or maximum fees. All fees are found within Title 13, Chapter 13 of the NC Administrative Code. It is the goal of the NC Department of Labor to modify these fees only when necessary. Increases to existing fees have been infrequent and are detailed in **Appendix A22**.

NCDOL proposes to increase select boiler and pressure vessel fees listed in **13 NCAC 13.0205, 13.0213, and 13.0303**. The current fee structure has not increased since 2015 and needs to be increased to reflect the rising cost of inspections. Increased training and travel time has lowered revenues per inspector. Operational costs have increased steadily in recent years as the travel distance required to complete inspections and fuel expenses have grown. Personnel costs have also grown from legislatively mandated salary increases. Each of these trends are discussed in more detail below. NCDOL also proposes to use fee revenues to fund an upgrade to the Bureau's billing system. These cost increases have been minor when viewed annually (mostly between 2-4%) but have a cumulative effect over several years.

The Bureau is 100% funded from their inspection fees, the Bureau does not receive any state appropriated funds nor any grant funds. The Bureau anticipates revenue shortfalls beginning in FY2022 if no action is taken. Inspection fee increases are necessary to continue operating while ensuring the Bureau's solvency for the years to come.

This increase will solidify inspection quality and allow the Bureau to implement financial planning principals to ensure solvency and continuity of service for the foreseeable future. Both the prior and the current Commissioner have strived to keep inspection fees as low as possible for North Carolina businesses. The proposed fee increase should be sufficient to meet the operational needs for the next five years under normal economic and inflationary conditions.

In 13 NCAC 13.0205(b)(5) (Appendix A6), a $25 increase is proposed for owner-user inspections from $25 to $50. Currently, there are no Owner-Users; therefore, there is no fiscal impact. This increase is only being made to meet the minimum for the Debt-Setoff program.

In 13 NCAC 13.0213, (Appendix A10) there are multiple fee revisions proposed:

1. A $15 increase is proposed for the certificate and processing fee for each boiler and pressure vessel inspected by an insurance inspection and found in compliance; the fee would go from $35 to $50;
2. The internal inspection fee for hobby boilers would increase from $35 to $50;

3. Both the external inspections of vessels (walk around with manual checking of controls and safety devices) and internal inspection fees of vessels (physically entering the larger devices/vessels) for pressure vessels would be consolidated from less than 20 square feet to simply less than 50 square feet. NCDOL is choosing to simplify the specifications and eliminate a separate rate for the smaller 20 square feet devices.

In 13 NCAC 13.0303 (Appendix A12), a $10 increase is proposed for the reinspection of any boiler or pressure vessel after the initial inspection finds repairs or other corrective actions are required; the fee would go from $40 to $50.

The increase in boiler and pressure vessel fees will affect any individual or entity that owns a commercial boiler and pressure vessel (inspection fees for multiple devices are not being increased.) Boiler and pressure vessels are owned by the private sector, state government, local governments, and municipalities.

It should be noted that fee increases were focused on lower fee amounts, with the majority of the inspections to occur on a two-year interval. While these are the most common inspections performed by DOL and insurance inspectors, they are "lower margin" services, as travel time, inspection reports, invoicing, etc., have more of an effect on these lower tier services. The minimum charge for an inspection for NCDOL is proposed to be $50. Please see Table III below for specific impacts for specific fees and affected parties. Data is based on last full year of inspections collected prior to disruptions caused by COVID-19.

See Table III on next page

TABLE III

Boiler Fee Title	Number of Items Collected 18-19	Current Fee Rate 18-19	Amount of Fees Collected 18-19	Proposed Fee Rate	Revenue Generated After Fee Increase	Difference	State Impact	Local, Municipal County Impact	Private Impact
Owner/Operator Boiler Inspections	0	**$25**	$0	**$50**	$0	**$0**	$0	$0	$0
Insurance BLR Inspection	8,751	**$35**	$306,285	**$50**	$437,550	**$131,265**	$15,435	$30,735	$85,485
Insurance PV Inspection	20,661	**$35**	$723,135	**$50**	$1,033,050	**$309,915**	$19,425	$18,780	$274,020
Ht Exch N-Cert Ext Inspection (less than 500)	2	**$45**	$90	**$50**	$100	**$10**	$0	$0	$0
Ht Exch CERT EXT Inspection (less than 500)	295	**$45**	$13,275	**$50**	$14,750	**$1,475**	$220	$115	$1,190
Follow-Up Boiler EXT Inspection	681	**$40**	$27,240	**$50**	$34,050	**$6,810**	$350	$1,840	$4,350
Follow-Up PV EXT Inspection	492	**$40**	$19,680	**$50**	$24,600	**$4,920**	$240	$270	$4,310
Hobby Boiler CERT Inspection	25	**$35**	$875	**$50**	$1,250	**$375**	$15	$45	$345
PV CERT EXT Inspection (less than 20)	8,722	**$40**	$348,880	**$50**	$436,100	**$87,220**	$1,890	$6,080	$79,410
PV N-CERT INT Inspection (less than 20)	5	**$45**	$225	**$50**	$250	**$25**	$0	$0	$0
PV CERT INT Inspection (less than 20)	1	**$35**	$45	**$50**	$50	**$5**	$0	$0	$0
PV Non CERT Ext Inspection (less than 20)	2	**$40**	$80	**$50**	$100	**$20**	$0	$0	$0
	39,637	**Before Total**	**$1,439,810**	**After Total**	**$1,981,850**	**$542,040**	**$37,575**	**$57,865**	**$449,110**

The primary impact for State Government would be for boiler and pressure vessel inspections. The increase would be on a **rolling reinspection** basis for devices whose prior inspections have expired and now due for reinspection. These re-inspections, beginning with the April 1, 2022 for specified boiler and pressure vessels, would be subject to the new proposed rate. Currently, the State of North Carolina includes those state agencies that maintain boilers or pressure vessels, to state hospitals, universities, community colleges, museums, crime labs, and prison buildings in which boiler and pressure vessels are located.

NCDOL will also have some additional administrative costs related to the updating of fees and notice to affected device owners. Those one-time costs are as follows:

Notice of Fee Increases to Device Owners: In addition to the public rulemaking process, which will include a public hearing, upon approval of the rule by the Rules Review Commission, adequate notice would have to be provided to the affected private and government device owners. While the rule revision, public hearing, comment period and notice of rule changes are part of the public record. NCDOL anticipates that not all affected parties will readily be informed, and additional avenues of notification are warranted.

Minimally, NCDOL will update our public facing website to provide notice to affected parties and fee effective dates. The cost for the development of document and posting of web notice will be approximately $830 in staff salary and another $203 in fringe benefits (FICA, Retirement). The Bureau intends on contacting all State and Local Government entities via a letter for upcoming inspections. Based on this number of unique addresses, the cost for mailing a one-page letter will be in excess of $2,500 with approximately $2,000 in postage and $500 in materials/printing (envelopes, one-page color notice). Staff time for assembling the mailing has not yet been calculated but should not be substantial since NCDOL has some envelope stuffing equipment at the agency's disposal as fee invoices are regularly mailed.

The primary impact for local and municipal governments is related to boiler and pressure vessels as well. As noted with State Government impact, the data currently provides that there are approximately 4,100 boiler and pressure vessels owned by either a local government or a municipality that are subject to an inspection annually. The impact of the fee increase for local governments/municipalities is estimated to be $57,865.

Private business and sole proprietorships will have the largest fiscal impact as they own the vast majority of the devices which are subject to fee increases. The largest segment would be pressure vessel owners where insurance inspectors are seeking a certificate for use. The impact of the fee increase for private businesses is estimated to be $449,110 annually as detailed in Table III.

Rationale for Requested Fee Increases

Increased Inspection District Distance and Loss of Productivity

The total number of devices requiring inspection has remained consistent for the prior decade; however, fewer of those inspections are conducted by NCDOL and more are performed by insurance company inspectors each year. This trend will most likely continue as it has for the last 10 years. In 2014, the State of North Carolina was responsible for 32,684 devices. Those devices insurance companies were responsible for totaled 58,344. As of February of 2021, the NCDOL was responsible for 27,125 devices, and

insurance companies inspected 64,918. In the last seven years that equates to 16% drop in devices inspected by NCDOL, and an 11% increase for insurance company inspectors. Inspectors employed by insurance companies are more akin to "risk assessors" in that they are not specialists dedicated to boiler inspections. They perform a wide variety of risk assessment tasks for insurance companies, but do not have the specific expertise that the NCDOL inspectors have to perform inspections of boilers and pressure vessels. Therefore, one cannot equate the NCDOL inspectors with the insurance risk assessment "inspectors."

In response to inspecting fewer devices each year the Bureau has eliminated two (2) positions since the last fee increase in 2015 to save funds, increasing the service territory of the remaining State inspectors This has the necessary but undesirable effect of increasing travel costs and lessening the amount of time each available to staff for on-site inspections as travel times increase.

Boiler and Pressure Vessel management has defined twelve (12) geographic-based inspection districts across the state and the inspectors live within or adjacent to the assigned districts. District sizes vary from 1 county (for urban areas) to 19 counties for rural areas. This was done to optimize staff productivity/efficiency by limiting travel time between device inspection locations. When staffing vacancies occur, inspectors are re-directed out of from their assigned home district to other districts in which annual boiler and pressure vessel inspections are not current. This increases costs to the agency for both travel, overnight stay, and reduction of efficiency within the inspector's assigned district. This results in reduced inspection time per week for the standard 40-hour workweek, which now includes extensive travel to districts that have a substantial backlog. This has also led to morale issues as staff travel further and spend more time away from home.

It is a goal of every inspector to produce 100% of the costs to employ them. However, there are multiple issues that will prevent an inspector from performing the minimum routine reinspections. Travel time is the greatest issue, however, the pandemic amplified the strain on the inspectors as they were often called upon to assist in other inspections that were past due and temporarily avoid other inspections where substantial health risk was noted (During COVID, this was medical facilities and retirement/group homes).

The percentage of overdue inspections is the current basis for inspectors' performance evaluations; this is based on State goals plus combined goals (State and Insurance inspections). Currently, the inspectors are required to keep overdue inspections at 1.4% of the total inspections due. Nationwide, insurance inspections are behind to a much larger degree; the number of overdue inspections has grown across the board in US. Even with these system disruptions, NCDOL inspectors have kept up with inspections and the current backlog of devices is only slightly above the stated goal.

Inflationary Pressures on Operational and Personnel costs

There have been increased costs borne by the agency, that annually may seem insignificant but have a cumulative effect over time. Personnel costs have increased over time due to legislatively mandated increases in salary and fringe accounts, and operational costs increase over time for the price of equipment, postage, milage/gas, telecommunication, printing, office supplies, etc. The Table IV below summarizes the difference in expenses realized in 2015 (the year of the last rate increase) and the final expenses recorded in June 2021. The total additional expense borne in the prior six years was $456,413.

TABLE IV

Expense Category	2015 (closed)	2021 (closed)	Difference
Personnel Costs (Salary/Fringe)	$1,667,171	$1,996,277	$329,106
Operating Costs (All Non-Personnel Costs)	$ 289,716	$ 417,023	$127,307

Difficulty in the Collection of Small Debts

As of September 30, 2021, the Bureau had $116,171 in receivables that were at 121+ days aging. This figure is made up of 1193 charges of which 608 of the owed fees are under $50. Collecting very small fees has been difficult for several reasons; mainly because it is a known fact that inspections are completed by Bureau inspectors to protect the public and billed to the business as a fee. Due to the statutory responsibility to protect the public, Bureau inspectors return to inspect devices even if the business has not paid prior fees.

Secondarily, small debts are difficult to collect using 3rd party collection agents. Currently, after DOL has exhausted several attempts to collect fees from businesses, they are set to a 3rd party collection agent to collect after 180 days have passed. The average rate of reimbursement for 3rd party collection agents is 14% of fees recovered. The reward for collecting a $35 fee is just $4.90 to a collection agency. Due to the small return on investment, it has been hard to have the collection agency make multiple attempts to collect, and most cases are returned to DOL for continued collections after 180 days with the 3rd collection agency.

Third and finally, claims under $50 are not covered under the Setoff Debt Collection Act (NCGS § 105A-4). That Act provides relief to state and local government entities by intercepting tax returns until the debt is paid. Since many of the fees are not subject to this option for collection, they often remain uncollected until they are written off due when the statute of limitations expires.

Anticipated Results/Benefits from Fee Increases

Retain Ability for Agency to Maintain A Qualified Workforce

Bureau inspectors must gain very technical knowledge on a wide array of devices. All inspectors must attain a North Carolina Commission pursuant to NCGS § 95-69.15 and 13 NCAC 13 .0203. An inspector who does not conduct at least one certificate inspection in North Carolina per calendar year, must retake and pass this examination before becoming commissioned again.

The inspectors must have a concrete understanding of all boiler and pressure vessel engineering and must be fully educated on safe operation techniques, which requires intensive training. During the training process, newly employed inspectors cannot inspect any devices alone; they must have a certified inspector on their inspections until they are qualified to work independently. The ability to perform inspections independently depends on prior field experience and the time needed to pass all exams required for a commission; this normally takes between 6 and 12 months to be able to inspect devices and to generate revenue. Currently, NCDOL has 100% NC Commissioned boiler and pressure vessel inspectors out of a total 16 inspectors, supervisors, Deputy Bureau Chief and Bureau Chief.

A North Carolina Commission may be suspended or revoked by the Commissioner in accordance with G.S. 95-69.11(20) if an inspector is incompetent or untrustworthy or has falsified any statement in an application or inspection report.

NCDOL has the twelve (12) total Boiler and Pressure Vessel inspectors and two (2) supervisor positions and five administrative specialists. The classifications are as follows:

- Twelve (12) Boiler and Pressure Vessel Inspectors; Grade GN12; Range - $46,203 - $78,218/year; Starting Salary $50,000 based on the FY 2019-2020 Budget Revision
- Two (#2) Boiler Supervisors; Grade GN13; Range $48,051 - $86,431/year;

The starting salary for a supervisor is a twenty (20%) increase to their inspector salary, if the salary is within the GN13 range.

Fortunately, the Bureau has been able to largely retain current staff, but that likely will not be the case in the future. Currently, NCDOL has several senior inspectors and supervisors; five Bureau staff that will be eligible to retire within three (3) years and an additional four (4) will be eligible to retire within five (5) years. It will be difficult to find new qualified candidates. Due to the technical nature of inspections, the workforce has to be largely developed through national standards study/examination and field training with a supervisor/senior inspector.

NCDOL currently pulls applicants from a variety of backgrounds. All inspectors are required to have a high school diploma and a minimum of three (3) years of experience in the construction, quality assurance, welding, or erection or servicing of boiler and pressure vessels and related equipment prior to being hired by NCDOL. Currently, Boiler and Pressure Vessel inspectors have an average of three (3) years of experience prior to being hired. The supervisors must have four (4) years of experience, two (2) of which have to be in regulatory inspections. However, having the minimum years of experience prior to joining the Bureau only results in a conditional employment offer; to become a permanent employee, the candidate must pass the required certification tests. An additionally potential complicating factor in recruiting staff is that they are to be home based and work in a specific defined inspection area for the state. Finding a qualified candidate that already lives or is willing to move to a remote district in the state can require additional time to find the right candidate.

It is important to reiterate that the current salary structure with annual inflationary increases has been sufficient to retain senior knowledgeable staff. However, the risk for retirement cannot be understated from a revenue generation perspective as new hires do not independently inspect and start generating receipts until they are fully qualified which can take several months (see above). If several senior inspectors/supervisors retire, the in-receipt projections would need to be modified accordingly.

Minimize Effect of External Factors on Future Inspections

The Bureau inspectors inspect approximately 28,000 boiler and pressure vessel devices in the State; the remaining 64,000 devices are inspected by private insurance company inspectors. The inspections are performed in privately-owned commercial and residential buildings, local government buildings, and State government buildings. During COVID-19, all NCDOL Boiler Safety Bureau inspectors became the “Inspector of last resort for overdue device inspections.” During March 2020 – March 2021, Bureau inspectors had to take over the inspections that insurance inspectors performed. In some cases, companies requested extensions, which were granted. The need for NCDOL to perform the inspections created a need for administrative redirection; both the Bureau Chief and the Deputy Bureau Chief performed field inspections for the period of March 2020 – March 2021. In addition, the two

regional supervisors performed field inspections to include approximately 585 Inspections that would be normally inspected by insurance companies.

Over the last several years, there has been a shift away in the number of devices inspected by Bureau inspectors toward more inspections being performed by insurance inspectors. However, the pandemic of 2020-2021 showed NCDOL the vulnerability of the Bureau, especially in relation to reliance on revenue from insurance inspections and certification fees. All insurance inspections stopped effective late March to early April of 2020, forcing the Bureau to perform inspections usually performed by insurance inspectors, thus creating more work for Bureau inspectors, increased travel time, and it required Bureau management to return to the field to perform inspections, in addition to performing managerial duties. The Bureau never stopped performing inspections during the COVID-19 pandemic and state of emergency, but the increased field work increased costs to the Bureau yet did not bring in significantly more offsetting income.

TABLE V

Inspections Completed by Supervisors/Upper Management by Year	**YEAR**	**# of Inspections**	**%Growth**
	2017	214	--
	2018	66	(69%)
	2019	117	77%
	2020	1,208	932%

Billing System Upgrade

The Bureau's central database and invoicing subsystem software have been in use for a number of years and needs a substantial upgrade. Since there would be a significant amount of customization necessary to convert historical data and provide an easier operational interface, there is a significant initial outlay expected of $200,000. In addition to the development costs, there is also a projected $25,000 in annual maintenance costs; there are no current resources for this upgrade other than additional receipts. This project's pricing is an estimate based on prior Bureau's expenses and is subject to changes in pricing and project implementation timing.

Fee Change Impacts by Year and Affected Party

The following table outlines the expected revenue impact by fiscal year as the inspections become due. It is important to note that fee increases have a gradual impact on cash flow, as the new fees once adopted cannot be billed until that device is due for the next inspection. While some inspections are performed annually, others may only be performed every four years, while the vast majority of inspections are for low pressure boilers and pressure vessels, which are inspected every two years. Please note that these projections are based on SFY19 inspection data; SFY20 and SFY21 inspections both had disruptions due to COVID 19, so SFY19 was picked as a more "normal" year upon which to base projections. This solvency projection is based on the following assumptions:

- Salary/fringe increases have been conservatively estimated at approximately 2% per annum based on the prior history of legislative increases.
- Operational growth rates have also been projected based on prior actuals, however it is important to note that these have been variable in the recent years due to COVID 19 effects where management was required to take unsustainable cost reduction activities to remain solvent during periods of receipt interruption.
- As part of DOL actions administrative and overhead costs were reduced as much as possible to reduce the draw of limited Bureau receipts during the pandemic, the projection does funds needed for administration and information technology to a proportional level to other funding sources.
- IT Software development costs are $200,000 and the implementation of that project will commence upon approval of fee increases and collection of those receipts. A recurring annual maintenance fee of $25,000 is projected post-implementation.
- Implementation of fee increase for April 1, 2022 or later, depending on the time required to proceed through the rulemaking process. Receipts in year 1 have been adjusted for normal lag time between inspection of device and payment of device (current average is > 30 days).

Table VI: The blue shaded row is the current projection of year-end net revenues (losses) at the current fee levels, including the implementation of the needed software upgrade. The green shaded row is the projection of net revenues after incorporating the proposed fee increases. See next page.

TABLE VI

Boiler Safety Bureau	**SFY-21 Actual**	**SFY-22 Projected**	**SFY-23 Projected**	**SFY-24 Projected**	**SFY-25 Projected**	**SFY-26 Projected**	**SFY-27 Projected**
Boiler Expenditures	$ 2,224,167	$ 2,364,012	$ 2,408,591	$ 2,434,876	$ 2,508,203	$ 2,558,381	$ 2,610,508
% Change from Prior Year	-4.67%	6.29%	1.89%	1.09%	3.01%	2.00%	2.04%
Boiler Salary and Fringe Expenses	$ 1,996,277	$ 2,039,259	$ 2,093,420	$ 2,132,877	$ 2,180,413	$ 2,229,535	$ 2,276,903
% Change from Prior Year	0.82%	2.15%	2.66%	1.88%	2.23%	2.25%	2.12%
Operational Expenses	$ 227,889	$ 324,754	$ 315,171	$ 301,999	$ 327,790	$ 328,846	$ 333,605
% Change from Prior Year	-35.45%	42.51%	-2.95%	-4.18%	8.54%	0.32%	1.45%
% of Boiler Receipts Budgeted for Admin	26.26%	30.35%	66.95%	80.22%	100.00%	100.00%	100.00%
Budget for DOL Admin & IT Overhead Costs	$ 323,027	$ 329,488	$ 336,077	$ 342,799	$ 350,000	$ 350,000	$ 350,000
DOL Admin & IT Overhead Costs	$ 84,841	$ 100,000	$ 225,000	$ 275,000	$ 350,000	$ 350,000	$ 350,000
Salary and Fringe Expenses	$ 66,416	$ 80,000	$ 180,000	$ 220,000	$ 280,000	$ 280,000	$ 280,000
Operational Expenses	$ 18,425	$ 20,000	$ 45,000	$ 55,000	$ 70,000	$ 70,000	$ 70,000
IT Software Development Cost (One-Time)			$ 200,000				
IT Maintenance for OnBase (Recurring)				$ 25,000	$ 25,000	$ 25,000	$ 25,000
Total Expenditures	**$ 2,309,008**	**$ 2,464,012**	**$ 2,833,591**	**$ 2,734,876**	**$ 2,883,203**	**$ 2,933,381**	**$ 2,985,508**
Total Boiler Receipts Collected	$ 2,364,614	$ 2,355,749	$ 2,347,599	$ 2,379,547	$ 2,384,574	$ 2,394,279	$ 2,409,995
Carry Over of Receipts from Prior SFY	$ 133,528	$ 189,134	$ 193,795	$ 249,843	$ 436,554	$ 479,966	$ 482,904
Total Revenues	**$ 2,498,141**	**$ 2,544,882**	**$ 2,541,394**	**$ 2,629,390**	**$ 2,821,128**	**$ 2,874,245**	**$ 2,892,899**
Carry-Forward Amount W/O Fee Increase	**$ 189,134**	**$ 80,870**	**$ (405,122)**	**$ (647,526)**	**$ (604,114)**	**$ (601,176)**	**$ (634,649)**

Proposed Receipt Adjustments							
Proposed Boiler Fee Increases	$ -	$ 112,925	$ 542,040	$ 542,040	$ 542,040	$ 542,040	$ 542,040
Adjusted Total Revenues	**$ 2,498,141**	**$ 2,657,807**	**$ 3,083,434**	**$ 3,171,430**	**$ 3,363,168**	**$ 3,416,285**	**$ 3,434,939**
Carry-Forward Amount with Fee Increase	**$ 189,134**	**$ 193,795**	**$ 249,843**	**$ 436,554**	**$ 479,966**	**$ 482,904**	**$ 449,431**

Traditionally, the Bureau has retained a receipt surplus roughly equal to two months' operational costs. Maintaining this operational reserve is important to be able to sufficiently fund operations in case of any disruptions; however, the disruption to the normal revenue stream caused by the pandemic highlighted the financial vulnerability for the Bureau to operate in a time of crisis. The reduction in revenue caused either by (1) insurance inspectors not performing inspections or (2) business' accounts payable staff working from home and not receiving mailed fee invoices from the Bureau resulted in some dire predictions for the ability to maintain payroll. Fortunately, insurance inspectors did return to work and NCDOL Boiler and Financial staff redoubled efforts to collect delinquent fees enough to generate a small carryforward for SFY21-22. The operational reserve entering SFY21-22 was $189,134, which is less than one month's expense for the Bureau. This fee increase would over time restore a two-month operational reserve of approximately $400,000. The operational reserve needed two months of expenses in SFY25-26 would be approximately $442,000 based on anticipated inflationary factors. **Table V** shows that although net carry-forward would be decreasing in that year in which the proposed increase would be sufficient to maintain operations.

B. Technical corrections and Terminology Updates

Technical Correction - 13 NCAC 13.0201 Name; Address (Appendix A3) - A technical correction is being made to update the fax number for the Bureau. There is no cost associated with this change.

Technical Correction - 13 NCAC 13.0210 (Appendix A8) -A technical correction is being made to replace "R Stamp" references with more current terminology used by the National Board to "R Certification." Additional technical correction is being made to eliminate reference to nuclear inspections as those are no longer performed by NCDOL inspectors.

Technical Correction - 13 NCAC 13.0211 (Appendix A9) - A technical correction is being made to replace reference to "annually" with more precise language of "minimum of once every twelve months." This will serve to minimize confusion on when an inspection is due. Additionally, this rule seeks to be more precise with the language "while in operation," this seeks to eliminate confusion on what is required during inspections, especially for testing of controls and safety devices.

Terminology updates – 13 NCAC 13. 0214; 13 NCAC 13.0401; 13 NCAC 13.0402; 13 NCAC 13.0405; 13 NCAC 13.0406
(Appendices A11, A13, A14, A15 and A16 respectively) - NCDOL is updating technical terminology throughout the current rules to terms commonly used in the industry and specifically used in National Board publications.

13 NCAC 13.0214 refers to the "remaining life analysis reports." That term "remaining life analysis" is no longer used in the industry. "Remaining Life analysis" reports have been replaced by "Fitness for Service" reports issued by the National Board as "NB-403" or equivalent reports such as a company-generated or some other individualized report that contains the same information as what is required on the NB-403.

13 NCAC 13.0401 is revised to add that "certification" of all boilers and pressure vessels must comply with the rules found in the NC Administrative Code and the accepted design and construction code, in addition to the currently required "stamping". Stamping was the previously used term, and it was considered to be an all-inclusive term. However, ASME and the National Boiler Code now differentiate between "stamping" and "certification" as these are now defined as separate activities.

NCDOL proposes several changes to 13 NCAC 13.0402 to harmonize with requirements in the ASME or the National Board standards. Subpart (e) excludes cast aluminum from those heating boilers required to be registered with the National Board because cast aluminum standards were added by ASME in or around 2007 and subpart (f) makes the same change regarding safety valves installed on high pressure boilers. New subparagraphs (k) and (l) are added simply to break down the current subparagraph (j) to clarify the various objects being discussed; no new language is added. Additional specifications are added to the renumbered subparagraph (t) is added to address minimum safety valve relief capacity being the same as those found in the National Board standards in Part 4, Section 2.

13 NCAC 13.0405 again makes a revision to be in accord with the National Board or ASME standards regarding pressure relief devices; this revision allows safety relief valves on certain boilers to be a type permitted by the accepted design and construction code, which will harmonize NCDOL rules with the National Board Standards or the ASME Code. NCDOL addressed this incongruence between the rule and national standards by providing an exception process to the current rule. The "exception process" is detailed

in discussion of changes to 13 NCAC 13 .0409 below. This "exception" process costs both private boiler/pressure vessel operators and NCDOL staff time which will be addressed in the fiscal impact section of this note.

13 NCAC 13. 0406 replaces the term "symbol" with "designator" to reflect current industry terminology. In addition, clarifying language is added explaining that a manual reset is not required for boilers that bear an ASME designator or for unfired pressure vessels. This suggested rule language is in accord with the ASME Code.

Terminology updates – 13 NCAC 13. 0409 (Appendix A17) - NCDOL proposes new language added to subparagraph (e) stating that constant water levels for automatically fired boilers are not required for hot water heating boilers used in closed-loop radiant floor heating systems when installed per the manufacturer's instructions; this language incorporates an exception and harmonizes with industry practice and manufacturers' recommendations. An exception from the constant water level requirement of 13 NCAC 13 .0409 (e) is currently required for closed loop radiant floor heating systems. Constant water levels cannot apply to closed-loop radiant floor heating systems. Closed loop systems originated for European domestic settings but have expanded to commercial settings in the United States. National standards are silent on this matter and state rules control. The requirement for constant water levels for automatically fired boilers was in place prior to the existence of closed-loop systems. Closed-loop systems do not require constant water levels and maintaining constant water levels may actually damage closed-loop systems. The addition of this will eliminate the need for NCDOL issuing ongoing exceptions to the rule.

The tubes in closed-loop radiant floor heating systems keep concrete warm in car washes, barns, etc. Pipes are filled with glycol and antifreeze. Low water cutoffs devices, high temperature limit controls, and pressure relief devices are installed so if the tubes leak antifreeze, the boiler will not overheat or cause an unsafe condition. Maintaining a constant water level is not required by the manufacturer of these boilers. ASME/NB are silent on this issue because this addresses water sources only and not the actual boiler itself. NCDOL issued an exception in 2013 because it is outside the scope of the boiler construction code. All exceptions are posted on the NCDOL website at: https://www.labor.nc.gov/safety-and-health/boiler-and-pressure-vessel-safety/policy-notifications.

NCDOL Chief Inspector has the authority to grant exceptions to the Rules per the Boiler statute in NCGS 95-69.11. The Chief Inspector has issued an exception for these devices from maintaining a constant water level. An exception is an administrative tool used by the Chief Inspector to interpret our Rules or add/change an administrative requirement. Exceptions are sent out to all Bureau inspectors and to insurance company inspectors, and were placed on our public website when issued. The purpose of the exception notice is to provide public notice of interpretations or enforcement actions, to include clarification of new technologies that are reflected in the ASME standards, and the rules need to be updated to current standards.

Although an exception has been publicly issued, some businesses still insist on a specific written exemption for their company. In order to address these inquiries, NCDOL will be granting specific letter exceptions for these devices. NCDOL's "exception" process is implemented when a new device comes into use and that device is not addressed in the NCDOL Boiler and Pressure Vessel current rules. The applicant submits a request via email to the Bureau Chief explaining why an "exception" to the current rules should be allowed. The Bureau Chief researches the request and issues an "exception" to the rules if the exception is found to be safe and reasonable.

By updating the rule to reflect devices covered, savings will be realized by both the state and owners of these devices. The creation and posting/emailing exceptions require approximately one hour per week to complete and are performed by the Bureau Chief/Chief Inspector or Deputy Bureau Chief/Deputy Chief Inspector. Savings to the Boiler/Pressure Vessel owners is realized by simply going to the administrative code rather than requesting an exception to the administrative code.

Terminology updates – 13 NCAC 13. 0420 (Appendix A18) - NCDOL proposes a new language added to subparagraph (c) regarding automatically fired boilers installed after January 1, 2007 required to have a remote emergency fuel shut-off switch. The language clarifies that boilers with an ASME "HLW" designator are not required to have such remove shut offs; this language incorporates an exception and harmonizes with the ASME Code. "HLW" designators are terminology used for low pressure water heaters, which have never required a remote shut off switch.

Terminology updates – 13 NCAC 13. 0422 and .0423 (Appendix A19 and A20 respectively) - NCDOL proposes to eliminate "manually-fired boilers" from the description of exhibition boilers and model hobby boilers because there are no other requirements for these boilers in the Boiler and Pressure Vessels statutes or rules except in relation to "toy boilers," which are defined in NCGS 95-69.10(b)(18) and are not applicable to this rule. Removing the term "manually-fired boiler" will not impact the number of exhibition/hobby boilers that are subject to inspection, thus there will not be any fiscal impact to this rule change. Other conforming revisions are being made to reflect revisions to National Board Inspection Code Part 2; therefore, a conforming revision is being made here to reflect the current industry standard.

Terminology updates – 13 NCAC 13. 0701 (Appendix A21) - NCDOL is proposing a revision to 13 NCAC 13. 0701 regarding nuclear power systems because ASME Code requirements have changed. Stating that the certification shall be in compliance with the ASME Code is sufficient, plus the requirement that a registered profession al engineer certify the design criteria is no longer required.

NCDOL has been addressing the incongruence in ASME code and rule through the "exception" process as mentioned in other suggested rule changes.

By updating the rule to reflect devices covered, savings will be realized by both the state and owners of these devices. The creation and posting/emailing of exceptions require approximately one hour per week to complete and are performed by the Chief Inspector or Deputy Chief Inspector. Savings to the Boiler/Pressure Vessel owners is realized by simply going to the administrative code rather than requesting an exception to the administrative code.

*C. **Incorporation of Recent References to National Safety Standards and Current Edition Pricing – 13 NCAC 13.0101 and .0103 (Appendix A1 and Appendix A2 Respectively)***

The NCDOL does not require business to purchase the most current national safety standards. The Bureau incorporates multiple national industry standards by reference into its rules. These standards are published by national organizations including but not limited to ANSI and ASME. These national standards, to include all updates, apply even though NCDOL does not amend its rules every time a new edition is issued or if prices increase. Therefore, there is no impact beyond notifying the regulated community of the most recent edition and/or cost as is required in NCGS § 150B-21.6.

This is general Information about the national industry standards incorporated by reference into the rules, which are being updated in these requested rule amendments.

- ANSI (American National Standards Institute) is a U.S.-based non-profit organization that works to establish and accredits performance and quality standards for products. The ANSI standards are safety standards that are applicable to a myriad of industries including ladder safety, fall protection, construction safety, clothing & equipment, workplace surfaces, etc.
- NB-23 for boilers, pressure vessels and related devices was developed to an ANSI standard.
- ASME (American Society of Mechanical Engineers) is a U.S. based non-profit professional association that includes an engineering society, a standards organization, a research and development organization, an advocacy organization, and a provider of training and education.
- North Carolina State Building Code

In updating national standard references and state building code references into rules, our agency will be providing the public with current contact information and pricing, which is required by NCGS § 150B-21.6, such that all affected parties will be aware of the industry standards to which inspections will be performed and the parties may readily obtain a copy of the standard manuals for their own reference or know where to access the documents. The national organizations have no specific timelines for new editions of industry standards. Publication of new editions depends on a multitude of factors, including new technology, results of litigation, etc., and those updates provide the most current industry standards for safety. There are no national organization referenced in these rules that publishes a new edition of their industry standards on an annual basis; new editions are generally published every two to six years.

The State of North Carolina enforces the State Building Code through the NC Department of Insurance, Office of the State Fire Marshal's Engineering Section. The NC State Building Code Council adopts and amends the NC State Building Code per NCGS § 143-138.

NCDOL is updating the information for the industry standard applicable to boilers, which is defined in 13 NCAC 13.0101 and currently incorporated by reference in 13 NCAC 13.0103. 13 NCAC 13.0103 was last amended in 2011. Since that time, the National Board Inspection Code has added a new Part 4 (in 2017) addressing Pressure Relief Devices, with another revision in 2019. The most recent edition was published July 2, 2021. This rule needs updating to reference the most current version of the American National Standards Institute (ANSI)/NB 23 - National Board Inspection Code (NBIC); the price increase for the publication is also reflected in the update. The price of the 2021 edition of the ASME Boiler and Pressure Vessel Code is $17,945 and ANSI/NB-23 and National Board Inspection Code (NBIC) will be $325 for electronic version. If a paper version is preferred, NBIC is available as a bundled printed and electronic set at a cost of $425. The NBIC is updated every two years. NCDOL usually orders two sets of the ANSI/NB-23; to include one for the Bureau office as the rules require. NCDOL obtains one for public access and one for inspectors to use to attend the National Board courses because actual books are required for use during the courses. NCDOL receives a single complimentary electronic copy.

Due to limited inspection receipts for the 2020-2021 fiscal year, the Bureau is only buying a single set the ANSI/NB-23 books and one set of the NBIC. It has been standard operational practice to the Bureau to have copies of the latest codebooks, so there is no additional cost borne by the agency due to suggested rule change.

This rule is further updated to correct outdated contact information where these publications can be purchased. NCDOL is proposing to eliminate the email address for the American Society of Mechanical Engineers (ASME) for the purchase of the Boiler

and Pressure Vessel Code as it is no longer a valid email. The ASME website is included for easy reference that doesn't change. Businesses wishing to purchase ASME codebooks will be able to navigate the website to purchase materials. NCDOL is correcting the address, phone number and website link for purchasing the North Carolina State Building Code as all are outdated. The Building Code can be obtained through the Office of the State Fire Marshal, which is part of the NC Department of Insurance.

Note: It is the opinion of NCDOL that the economic impact of this rule change will be minimal with the only expenses likely being the purchase of updated 2021 standard manuals by private businesses. NCDOL is unable to determine actual economic cost to private owners without knowledge of the most recent publication date of the edition of the standards manual(s) that each owner currently owns; however, not all businesses will need to purchase the most current edition if they have no application to existing devices. Without providing a survey to affected businesses detailing their subscription/edition version of the standards, it would be impossible to determine how many businesses may need to purchase a more current version. This rule does not require the business to purchase a new standard.

D. ***Corrections/revisions related to changes at the National Board of Boiler and Pressure Vessel Inspectors, and changes to reflect more efficiency for inspection reports***

13 NCAC 13.0202 Inspector Qualifications - Examinations Administered by National Board (Appendix A4)
There is a pending change before the National Board of Boiler and Pressure Vessel Inspectors regarding examinations such that the examinations will no longer be administered through Applied Management Professionals ("AMP"), a third-party test coordination service; examinations will be administered through the National Board itself. In addition, the National Board In-Service examinations no longer cover maintenance or repairs of boilers and pressure vessels. The rule is being revised to accurately reflect the topic covered in the examination. As of October 1, 2021, the pending change has not been finalized. However, this proposed change to the rule will correctly reflect the examination process regardless of when the change will be finalized. In addition to the reference of examinations being no longer administered by AMP (subpart (d)), there are a few other minor corrections on this rule:

A clarification is being made to subpart (c) so that for an inspector to remain commissioned, they must complete at least one certificate inspection per year. Inspector can perform other types of inspections that do not result in a certification of devices, so this clarifies the required type of inspection to keep a valid commission. In rare instances, this will require an inspector to perform a full inspection to maintain their expertise to ensure full licensure in North Carolina.

A technical correction is being made to subpart(e) in that the National Board In-service Inspector Examination no longer includes the topic of maintenance or repairs. Therefore, the current verbiage is being struck to reflect the topics of the "in service" examination.

13 NCAC 13.0203 North Carolina Commission – Additional signature authority (Appendix A5)
NCDOL is proposing to allow the signature of the Chief Inspector (Bureau Chief of the Boiler and Pressure Vessel Bureau) on commission cards for North Carolina Commissions as an alternative to the Commissioner of Labor's signature. Pursuant to NCGS 95-69.11(2), the Commissioner of Labor is empowered to delegate to the Chief Inspector any power, duties, and responsibilities that the Commissioner determines will best serve the public interest. This change was recommended to make it more efficient to issue commissions should the Commissioner not be readily available to sign newly issued commissions.

The change will not remove any authority from the Commissioner of Labor but will simplify the process when a new commissioner is elected or when a new chief inspector is appointed. This only provides more flexibility for physically signing a commission card for a North Carolina Commission.

13 NCAC 13.0207 Inspection Report - Insurance Policy Identifier added (Appendix A7)
NCDOL proposes to add insurance policy identifiers to all inspection reports for any equipment inspected. This will provide objective evidence of an insurance policy should an audit or investigation be performed, and it will ensure compliance with NCGS 95-69-15(b) and 13 NCAC 13.0101.

NCGS 95-69.15 allowed inspections to be performed by NCDOL Inspectors, Special or Insurance Inspectors, or Owner-User Inspectors. NCGS 95-69.15(a)(2) states that "Special Inspector or Insurance Inspector. Shall be a qualified individual regularly employed by an insurance company authorized to insure in this State against injury to person or property or both from explosions and accidents involving boilers and pressure vessels. Special Inspectors shall not include employees of private contract inspection agencies." Since a majority of pressure vessels in North Carolina are inspected by inspectors directly employed by the insurance company that insures the actual presser vessels, this change is needed to track which inspector and company is actually inspecting the device. The insurance policy number that is covering a device provides objective evidence that an insurance company is writing an insurance policy to comply with all Boiler and Pressure Vessel statutes and rules. If the insurance company's authorization to insure in NC was to come into question, this would be an auditable point. NCDOL has found that Insurance companies are subcontracting inspections to other insurance companies, thus creating an inability for NCDOL to ascertain the actual insurance carrier of the device. This was addressed in an exception issued December 2, 2019, so that NCDOL could affirmatively track

inspections by insurance inspectors: https://files.nc.gov/ncdol/boiler/boiler-policy-notices/2019_Insurance_policy_numbers_on_reports.pdf

Insurance carrier information is already printed on inspection form, and there is space for the insurance policy number on the form. Further, there is no additional cost in changing electronic forms.NC Administrative Code states that insurance company inspectors are only commissioned to inspect Boilers and Pressure Vessels insured by their employer. By requiring the policy number, this will serve as a way to confirm an inspector who is not affiliated with the insuring company has not performed the inspection illegally. The proposed rule change requires the inspector to enter the policy number on the form.

IV. SUMMARY OF FISCAL IMPACT FROM PROPOSED RULE CHANGES

Most of the proposed administrative rule changes will have no fiscal impact on Government entities or the private sector; largely these rules without fiscal impact or which will have minor unknown efficiency impacts, are associated with rules that require technical or terminology changes. As detailed in Section III, the largest impact to all parties is due to the proposed fee changes discussed in detail in the preceding section. In order to simplify and summarize the overall impact, the table below is provided. Where fiscal impacts are noted in section III they have been outlined and have corresponding footnotes that link to the narratives provided in section III.

See **TABLE VII** on the next page.

TABLE VII

Rule #	Rule Name	State Government	Local Government	Private Party
13 NCAC 13 .0101	DEFINITIONS	$0	$0	$0
13 NCAC 13 .0103	INCORPORATED – STANDARDS	$18,270[3]	$0	$0
13 NCAC 13. 0201	NAME: ADDRESS	$0	$0	$0
13 NCAC 13 .0202	INSPECTOR QUALIFICATION	$0	$0	$0
13 NCAC 13 .0203	NORTH CAROLINA COMMISSION	$0	$0	$0
13 NCAC 13 .0205	OWNER-USER INSPECTION ORGANIZATION	$0	$0	$0
13 NCAC 13 .0207	INSPECTION REPORTS	$0	$0	$0
13 NCAC 13 .0210	SHOP INSPECTIONS AND NATIONAL BOARD "R" CERTIFICATE QUALIFICATION REVIEWS	$0	$0	$0
13 NCAC 13 .0211	CERTIFICATE INSPECTIONS	$0	$0	$0
13 NCAC 13 .0213	CERTIFICATE AND INSPECTION FEES	$41,108[4,5]	$57,865[4]	$449,110[4]
	Additional Receipts to DOL	($542,040)		
13 NCAC 13 .0214	EXTENDED PRESSURE EQUIPMENT OPERATING CERTIFICATES	$0	$0	$0
13 NCAC 13 .0303	INSPECTIONS REVEALING DEFICIENCIES	$0	$0	$0
13 NCAC 13 .0401	DESIGN AND CONSTRUCTION STANDARDS	$0	$0	$0
13 NCAC 13 .0402	NORTH CAROLINA STAMPING AND REGISTRATION	$0	$0	$0
13 NCAC 13 .0405	PRESSURE RELIEF DEVICES	$0	$0	$0
13 NCAC 13 .0406	HIGH PRESSURE OR TEMPERATURE LIMIT CONTROL	Unknown[1]	$0	Unknown[1]
13 NCAC 13 .0409	AUTOMATIC LOW-WATER FUEL CUTOFF CONTROLS AND WATER- FEEDING DEVICES	Unknown[1]	$0	Unknown[1]
13 NCAC 13 .0420	FIRING MECHANISM CONTROLS	$0	$0	$0
13 NCAC 13 .0422	EXHIBITION BOILERS	$0	$0	$0
13 NCAC 13 .0423	MODEL HOBBY BOILERS	$0	$0	$0
13 NCAC 13 .0701	STANDARDS	($6,703)[2]	$0	Unknown[1]
	Total Impact by Effected Party	**($492,898)**	**$57,865**	**$449,110**

[1] Savings will be realized by State and Private parties as less rule exceptions will need to be requested. Savings to private party would be the time savings from providing documentation via email to Chief Inspector, and savings to DOL would be realized by spending less time in granting exceptions and posting exception notices on DOL website

[2] Calculated time savings for exceptions granted by Chief Inspector is 1 hour per week, plus associated fringe benefits. Amount reported is expected savings for calendar year.

[3] Costs associated with new version of ASME Codebook of $17,945 and $325 for the electronic version of ANSI/NB-23 and NBCI standards. NCDOL is required to make copies of these standards available for inspection by public.

[4] Detail by fee available on Table III. Methodology was to take inspections by fee type for "normal" year prior to any COVID-19 effects and multiply the number of device inspections by the proposed increase in rate.

[5] $37,575 (recurring for device owners); NCDOL $3,533; $1,033 for Web Posting, and $2,500 for mailing notice (one-time costs)

Appendix A1:

13 NCAC 13 .0101 is proposed for amendment as follows:

SECTION .0100 - DEFINITIONS

13 NCAC 13 .0101 DEFINITIONS

The following definitions shall apply throughout the rules in this Chapter and shall be construed as controlling in case of any conflict with the definitions contained in ANSI/NB-23 National Board Inspection Code Parts ~~2 and 3,~~ 2, 3 and 4, The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, or The North Carolina State Building Code:

(1) "Accepted Design and Construction Code" means the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers (ASME Code), or a comparable code with standards that the Chief Inspector determines to be equivalent to the ASME Code.

(2) "Appurtenance" means any control, fitting, appliance, or device attached to or working in conjunction with the boiler proper or pressure vessel.

(3) "ASME Code" means the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers.

(4) "Audit" means activities, other than certificate inspections, conducted by the Chief Inspector or his designee. Audits include the following:

(a) reviews ~~and surveys~~ for ASME and National Board ~~stamp~~ certificate issuance and renewal;

(b) audits conducted of an authorized inspector at the location of a manufacturer or repair organization as may be required by the ASME Code, National Board Inspection Code, or National Board Rules for Commissioned Inspectors; and

(c) audits pursuant to evaluation for the issuance of North Carolina Specials.

(5) "Automatically fired boiler" means a boiler that cycles in response to a control system and that does not require a constant attendant for the purpose of introducing fuel into the combustion chamber or to control electrical input. Electricity shall be considered a fuel for electrically fired boilers.

(6) "Authorized Inspection Agency" means an organization employing commissioned inspectors, including the following:

(a) the Bureau, as defined in Item (11) of this Rule.

(b) an inspection agency of an insurance company licensed to write boiler and pressure vessel insurance; or

(c) an owner-user inspection organization that is accredited by the National Board.

(7) "Authorized inspector" means an employee of an Authorized Inspection Agency who is commissioned by the National Board and this State, holds an endorsement on his or her National Board Commission appropriate for the work to be performed, and inspects as the third party inspector in ASME Code manufacturing facilities.

(8) "Boiler," as defined in G.S. 95-69.9(b), includes the following types of boilers:

(a) "Exhibition boiler" means a historical or antique boiler that generates steam or hot water for the purposes of entertaining or educating the public or is used for demonstrations, tourist transportation, or exhibitions. This term includes boilers used in steam tractors, threshers, steam powered sawmills, and similar uses;

(b) "High pressure boiler" means a boiler in which steam or other vapor is generated at a pressure of more than 15 psig or water is heated to a temperature greater than 250°F and a pressure greater than 160 psig for use external to itself. High pressure boilers include the following:

(i) Electric boilers;

(ii) Miniature boilers;

(iii) High temperature water boilers; and

(iv) High temperature liquid boilers (other than water);

(c) "Low pressure boiler" means a boiler in which steam or other vapor is generated at a pressure of not more than 15 psig or water is heated to a temperature not greater than 250°F and a pressure not greater than 160 psig, including the following:

(i) "Hot water heating boiler" means a low pressure boiler that supplies heated water that is returned to the boiler from a piping system and is used normally for building heat applications (hydronic boiler);

(ii) "Hot water supply boiler" means a low pressure boiler that furnishes hot water to be used externally to itself; and

(iii) "Steam heating boiler" means a low pressure boiler that generates steam to be used normally for building heat applications;

(d) "Model hobby boiler" means a boiler that generates steam, whether stationary or mobile, and is used for the purpose of entertainment or exhibiting steam technology, where the boiler does not exceed:

(i) 20 square feet of heating surface;

(ii) a shell diameter of 16 inches;

(iii) a volume of 5 cubic feet; and

(iv) a pressure of 150 psig;

(e) "Water heater" means a closed vessel in which water is heated by the combustion of fuel, by electricity, or by any other source and withdrawn for potable use external to the system at pressures not exceeding 160 psig and temperatures not exceeding 210°F.

(9) "Boiler blowoff" means the system associated with the rapid draining of boiler water to remove concentrated solids that have accumulated as a result of steam generation. This term also applies to the blowoff for other boiler appurtenances, such as the low-water fuel cutoff.

(10) "Boiler proper" or "pressure vessel" means the internal mechanism, shell, and heads of a boiler or pressure vessel terminating at:

(a) the first circumferential joint for welded end connections;

(b) the face of the first flange in bolted flange connections; or

(c) the first threaded joint in threaded connections.

(11) "Bureau" means the Boiler and Pressure Vessel Bureau of the North Carolina Department of Labor.

(12) "Certificate inspection" means an inspection, the report of which is used by the Chief Inspector as justification for issuing, withholding, or revoking the inspection certificate. The term "certificate inspection" also applies to the external inspection conducted in accordance with this Chapter whether or not a certificate is intended to be issued as a result of the inspection.

(13) "Condemned boiler or pressure vessel" means a boiler or pressure vessel:

(a) that has been found not to comply with G.S. Chapter 95, Article 7A, or this Chapter;

(b) that constitutes a menace to public safety; and

(c) that cannot be repaired or altered so as to comply with G.S. Chapter 95, Article 7A, and this Chapter.

(14) "Coil type watertube boiler" means a boiler having no steam space, such as a steam drum, whereby the heat transfer portion of the water-containing space consists only of a coil of pipe or tubing.

(15) "Commissioned inspector" means an employee of an Authorized Inspection Agency who is commissioned by the National Board and this State, holds an endorsement on his or her National Board Commission appropriate for the work to be performed, and who is charged with conducting in-service inspections of pressure equipment and inspecting repairs or alterations to that equipment.

(16) "Defect" means any deterioration to the pressure equipment affecting the integrity of the pressure boundary or its supports. Defects may be cracks, corrosion, erosion, bags, bulges, blisters, leaks, broken parts integral to the pressure boundary such as stays, or other flaws identified by NDE or visual inspection.

(17) "Deficiency" means any violation of the Uniform Boiler and Pressure Vessel Act, rules of this Chapter, or identified defects.

(18) "Design criteria" means design and construction code requirements relating to the mode of design and construction of a boiler or pressure vessel.

(19) “Equipment” means any boiler or pressure vessel subject to inspection by the Bureau, when the term applies as used.

~~(19)~~ (20)"External inspection" means an inspection of the external surfaces and appurtenances of a boiler or pressure vessel. An external inspection may entail "shutting down" a boiler or pressure vessel while it is in operation, including inspection of internal surfaces, if the inspector determines this action is warranted.

~~(20)~~ (21)"Hydropneumatic storage tank" means a pressure vessel used for storage of water at ambient temperature not to exceed 120°F and where a cushion of air is contained within the vessel.

~~(21)~~ (22) "Imminent danger" means any condition or practice in any location that a boiler or pressure vessel is being operated such that a danger exists that could be expected to cause death or serious physical harm if the condition is not abated.

~~(22)~~ (23) "Insurance inspector" means the special inspector employed by an insurance company, and holding a valid North Carolina Commission and National Board Commission.

~~(23)~~ (24) "Internal inspection" means as complete an examination as can be made of the internal and external surfaces and appurtenances of a boiler or pressure vessel while it is shut down.

~~(24)~~ (25)"Maximum allowable working pressure" or "MAWP" means the maximum gauge pressure as determined by employing the stress values, design rules, and dimensions designated by the accepted design and construction code or as determined by the Chief Inspector in accordance with this Chapter.

~~(25)~~ (26) "Menace to public safety" means a boiler or pressure vessel that cannot be operated without a risk of injury to persons and property.

~~(26)~~ (27) "Miniature boiler" means a boiler that does not exceed any of the following:

(a) 16 inch inside shell diameter;

(b) 20 square feet of heating surface (does not apply to electrically fired boilers);

(c) 5 cubic feet volume; and

(d) 100 psig maximum allowable working pressure.

~~(27)~~ (28)"National Board Commission" means the commission issued by the National Board to those individuals who have passed the National Board commissioning examination and have fulfilled the requirements of the National Board Rules for Commissioned Inspectors.

~~(28)~~ (29)"National Board Inspection Code" or "NBIC" means the ANSI/NB-23 standard published by the National Board, as incorporated by reference under Rule .0103 of this chapter.

~~(29)~~ (30)"Nondestructive examination" or "NDE" means examination methods used to verify the integrity of materials and welds in a component without damaging its structure or altering its mechanical properties. NDE may involve surface, subsurface, and volumetric examination. Visual inspection, x-rays, and ultrasound are examples of NDE.

~~(30)~~ (31)"Nonstandard boiler or pressure vessels" means:

(a) high pressure boilers contracted for or installed before December 7, 1935;

(b) heating boilers contracted for or installed before January 1, 1951;

(c) pressure vessels contracted for or installed before January 1, 1976;

(d) hydropneumatic storage tanks contracted for or installed before January 1, 1986; and

(e) boilers or pressure vessels to which the ASME Code is not intended to apply, other than those boilers and pressure vessels to which the term North Carolina Special applies.

~~(31)~~ (32)"Normal working hours" means between the hours of 6:00 AM and 6:00 PM, Monday through Friday, except for State recognized holidays established in 25 NCAC 01E .0901.

~~(32)~~ (33)"North Carolina Commission" means the commission issued by the Commissioner to those individuals who have passed the examination administered by the Chief Inspector relating to the Uniform Boiler and Pressure Vessel Act and the rules of this Chapter, and who also hold a National Board Commission, authorizing them to conduct inspections in this State.

~~(33)~~ (34)"North Carolina Special" means a boiler or pressure vessel that is not constructed in compliance with the Accepted Design and Construction Code as defined in Item (1) of this Rule and for which the owner or operator shall apply for a special inspection certificate with the Chief Inspector.

~~(34)~~ (35)"NPS" means nominal pipe size.

~~(35)~~ (36)"Nuclear component" means the items in a nuclear power plant such as pressure vessels, piping systems, pumps, valves, and component supports.

~~(36)~~ (37)"Nuclear system" means a system comprised of nuclear components that serve the purpose of producing and controlling an output of thermal energy from nuclear fuel and includes those associated systems essential to the function and overall safety of the power system.

~~(37)~~ (38)"Operating pressure" means the pressure at which a boiler or pressure vessel operates. It shall not exceed the MAWP except as shown in Section I of the ASME Code for forced-flow steam generators.

~~(38)~~ (39)"Owner or user" means any person or legal entity responsible for the operation of any boiler or pressure vessel installed in this State. This term also applies to a contractor, installer, or agent of the owner or user.

~~(39)~~ (40)"Owner-user inspector" means an individual who holds a valid North Carolina Commission and National Board Commission and is employed by a company operating pressure vessels for its own use and not for resale and maintaining an inspection program that meets the requirements of the National Board for periodic inspection of pressure vessels owned or used by that company.

~~(40)~~ (41)"Pressure piping" means piping, including welded piping, external to high pressure boilers from the boiler proper to the required valve(s).

~~(41)~~ (42)"Pressure relief devices" mean the devices on boilers and pressure vessels set to open and relieve the pressure in the event of an over-pressurization event, and include the following:

(a) "Non-reclosing pressure relief device" means a pressure relief device designed to remain open after operation; and

(b) "Pressure relief valve" means a pressure relief device that is designed to reclose and prevent the further flow of fluid after normal conditions have been restored. These devices include:

(i) "Relief valve" means an automatic pressure relief valve that is actuated by static pressure upstream of the valve that opens further with the increase in pressure over the opening pressure;

(ii) "Safety relief valve" means an automatic pressure relief valve that is actuated by static pressure upstream of the valve and characterized by full opening pop action or by opening in proportion to the increase in pressure over the opening pressure; and

(iii) "Safety valve" means an automatic pressure relief valve that is actuated by static pressure upstream of the valve and characterized by full opening pop action.

~~(42)~~ (43)"PSIG" means pounds per square inch gauge.

~~(43)~~ (44)"Reinspection or Follow-Up Inspection" means an examination necessary to verify that any repair or corrective action required as a result of a certificate inspection is completed.

~~(44)~~ (45)"Service vehicle" means a vehicle mounted with an air storage tank that services vehicles and equipment in the field away from the owner's shop.

~~(45)~~ (46)"Shop inspection" means an inspection conducted by an Authorized Inspector or a Commissioned Inspector pursuant to an inspection service agreement whereby the fabrication process or the repair or alteration of a boiler or pressure vessel is observed to ensure compliance with the ASME Code and the NBIC~~, including nuclear shop inspection where fabrication or material supply is done by the holder of an ASME "N" type certificate~~.

~~(46)~~ (47)"Special inspection" means any inspection conducted by a Deputy Inspector other than a regularly scheduled inspection, including the performance of an inspection by a Deputy Inspector that requires that the inspector make a special trip to meet the needs of the individual or organization requesting the inspection, conducting certificate inspections during hours other than normal working hours, and inspection of field repairs and alterations. A special inspection may be considered any inspection or activity not otherwise described in these Rules.

~~(47)~~ (48)"Special inspector" means a National Board commissioned inspector employed by an insurance company authorized to write boiler and pressure vessel insurance in the State of North Carolina.

~~(48)~~ (49)"Violation" means the failure to comply with the requirements of the Uniform Boiler and Pressure Vessel Act or this Chapter.

History Note: *Authority G.S. 95-69.11; 95-69.14;*
Eff. May 29, 1981;
Temporary Amendment [(16)]; Eff. March 10, 1982, for a Period of 120 Days to Expire on July 8, 1982;
Amended Eff. March 1, 2017; March 1, 2015; July 1, 2011; January 1, 2009; July 1, 2006; January 1, 1995; January 1, 1987; January 1, 1986; June 1, 1982;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended Eff. January 1. 2022.

Appendix A2:

13 NCAC 13 .0103 is proposed for amendment as follows:

13 NCAC 13 .0103 INCORPORATED - STANDARDS

(a) The following standards are incorporated by reference, including subsequent amendments and editions of the standards:

(1) The ANSI/NB-23 National Board Inspection Code (NBIC) Parts ~~2 and 3.~~ 2, 3 and 4. Copies of the ANSI/NB-23 National Board Inspection Code Parts ~~2 and 3~~ 2, 3 and 4 are available for inspection at the offices of the Bureau and may also be obtained from the National Board of Boiler and Pressure Vessel Inspectors, via U.S. Mail at 1055 Crupper Avenue, Columbus, Ohio 43229~~-43299~~, via telephone at (614) 888-8320, or via the internet at www.nationalboard.org. The cost ~~is one hundred and fifty dollars ($150.00)~~ three hundred and twenty-five dollars ($325.00) per NBIC ~~hard copy~~ printed edition or PDF version (complete set to include Parts 1-4).~~; sixty-five dollars ($65.00) for one part only; and one hundred and thirty dollars ($130.00) for two parts only, plus shipping and handling~~. Individual parts are available in printed editions as follows: Part 1 for one hundred fifteen dollars ($115.00); Part 2 for one hundred fifty dollars ($150.00); Part 3 for one hundred fifty dollars ($150.00); and Part 4 for one hundred fifteen dollars ($115.00).

(2) The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. Copies of the complete set of the ASME Code are available for inspection at the offices of the Bureau and may also be obtained from the American Society of Mechanical Engineers, via U.S. Mail at 150 Clove Road, 6th Floor, Little Falls, New Jersey 07424-2139, ~~P.O. Box 2300, Fairfield, New Jersey 07007-2300,~~ via telephone at (800) 843-2763, via facsimile at (973) 882-1717 or (800) 843-2763, ~~(973) 882-1170~~, via email at customercare@asme.org ~~infocentral@asme.org~~, or via the internet at www.asme.org. The cost is ~~fourteen thousand five hundred dollars ($14,500)~~ seventeen thousand nine hundred and forty-five dollars ($17.945.00) for the complete 2021 edition of the code.

(3) The North Carolina State Building Code. Copies of the North Carolina State Building Code are available for inspection at the offices of the Bureau and may also be obtained either from the North Carolina Department of Insurance, Office of the State Fire Marshall, ~~Engineering Division, Codebook Section, via walk-in at 322 Chapanoke Road, Suite 200, Raleigh, North Carolina 27603, or from the International Code Council via telephone at (800) 786-4452 or via the internet at www.ncdoi.com/OSFM/Engineering/CodeServices/engineering_codeservices_sales.asp. The cost is one hundred sixteen dollars ($116.00) per copy~~ Engineering & Codes, 325 North Salisbury Street, Raleigh, North Carolina 27603. Information regarding cost of the publications may be obtained at the same address. Costs are based upon the cost to the N.C. Department of Insurance for publication, distribution, and annual revisions. The codes may be ordered via the internet at https://www.ncosfm.gov/codes.

(b) The rules of this Chapter shall control when any conflict between these Rules and the standards cited in Subparagraphs (a)(1) and (2) of this Rule exists. In the event that a conflict between these Rules and the North Carolina State Building Code exists, the more stringent standard prevails and shall be adhered to.

History Note: *Authority G.S. 95-69.11; 95-69.14;*
Eff. January 1, 1995;
Amended Eff. July 1, 2011; July 1, 2006;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended Eff. January 1, 2022.

Appendix A3:

13 NCAC 13 .0201 is proposed for amendment as follows:

SECTION .0200 - ADMINISTRATION

13 NCAC 13 .0201 NAME: ADDRESS

(a) The Boiler and Pressure Vessel Bureau, which administers the provisions of Article 7A of G.S. Chapter 95, is located in Raleigh at the following physical address:

N.C. Department of Labor
Boiler and Pressure Vessel Bureau
Old Revenue Building
111 Hillsborough Street
Raleigh, North Carolina 27603.

(b) All correspondence shall be addressed to the following mailing address:

North Carolina Department of Labor
Boiler and Pressure Vessel Bureau
1101 Mail Service Center

Raleigh, North Carolina 27699-1101

Telephone (919) 707-7918

Fax (919) ~~807-2762.~~ 707-7960.

History Note: *Authority G.S. 95-69.12;*
Eff. May 29, 1981;
Amended Eff. July 1, 2006; January 1, 1995; June 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, 2018;
Amended Eff. January 1, 2022; January 1, 2020.

Appendix A4:

13 NCAC 13 .0202 is proposed for amendment as follows:

13 NCAC 13 .0202 INSPECTOR QUALIFICATION

(a) Deputy Inspectors conducting certificate inspections shall be in possession of a valid North Carolina Commission. Special Inspectors and Owner-User Inspectors shall be in possession of a National Board Commission and a North Carolina Commission.

(b) A North Carolina Commission shall be issued to an inspector who:

(1) has attained a passing grade of 70 percent or higher on an examination administered by the Chief Inspector relating to the Uniform Boiler and Pressure Vessel Act and the rules of this Chapter; and

(2) meets all other criteria as set forth in the Uniform Boiler and Pressure Vessel Act and this Chapter.

(c) If a North Carolina Commissioned inspector does not conduct at least one certificate inspection in North Carolina per calendar year, the inspector must retake and pass this examination before becoming commissioned again in this state.

(d) National Board examinations are administered by the National Board of Boiler and Pressure Vessel Inspectors ~~through Applied Measurement Professionals ("AMP")~~. Information on the examinations may be found on the National Board web site at www.nationalboard.org or by telephone at (614) 888-8320.

(e) The National Board Inservice Inspector examination covers the installation, operation, ~~maintenance and repair~~ and inspection of boilers and pressure vessels and their appurtenances. A grade of 70 percent or higher must be attained to achieve a passing grade on the examination.

History Note: *Authority G.S. 95-69.11; 95-69.15;*
Eff. May 29, 1981;
Amended Eff. July 1, 2011; January 1, 2009; July 1, 2006; January 1, 1995; September 1, 1986;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended January 1, 2022.

Appendix A5:

13 NCAC 13 .0203 is proposed for amendment as follows:

13 NCAC 13 .0203 NORTH CAROLINA COMMISSION

(a) When requested by the employer and upon presentation of a completed Application for Commission as an Inspector of Boilers and Pressure Vessels, a North Carolina Commission, bearing the signature of either the ~~Commissioner,~~ Commissioner or Chief Inspector, shall be issued by the ~~Commissioner~~ Chief Inspector to persons holding a valid National Board Commission who have taken and passed the examination specified in 13 NCAC 13 .0202(b).

(b) Applications for a North Carolina Commission shall be processed upon proof of a National Board Commission and payment of a thirty-five dollar ($35.00) fee to the Department of Labor.

(c) North Carolina Commissions shall be valid through December 31 of each year, at which time the inspector's employer shall submit a renewal request letter and a thirty-five dollar ($35.00) fee to the Department of Labor.

(d) The North Carolina Commission shall be returned by the employing company with notification of termination date to the Bureau within 30 days of termination of employment.

(e) A North Carolina Commission may be suspended or revoked by the Commissioner in accordance with G.S. 95-69.11(20) if an inspector is incompetent or untrustworthy or has falsified any statement in an application or inspection report. The Commissioner shall give notice of the commencement of proceedings for suspension or revocation of a commission pursuant to G.S. 150B-23. A North Carolina Commission may be suspended prior to the hearing if the Chief Inspector determines that the public health, safety, or welfare requires the suspension. In this case, the proceedings shall be promptly commenced and determined in accordance with G.S. 150B-3. The Commissioner's decision regarding the competency of an inspector shall be determined after consideration of the knowledge, skill, and care possessed and employed by boiler and pressure vessel inspection personnel in good standing. Industry custom and practice shall be considered but

are not determinative. Failure to conduct the inspections in accordance with this Chapter shall constitute incompetence. The Commissioner shall give the inspector opportunity to show that he or she is conducting his or her duties in a competent manner and that suspension or revocation is unwarranted. If the inspector believes that the decision of the Commissioner is not warranted, the inspector may take exception to the determination, in which event the inspector may appeal the final determination of the action pursuant to G.S. 150B.

History Note: *Authority G.S. 95-69.11; 95-69.15;*
Eff. May 29, 1981;
Amended Eff. March 1, 2017; March 1, 2015; July 1, 2011; January 1, 2009; July 1, 2006; January 1, 1995; March 2, 1992; September 1, 1986;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended January 1, 2022.

Appendix A6:

13 NCAC 13 .0205 is proposed for amendment as follows:

13 NCAC 13 .0205 OWNER-USER INSPECTION ORGANIZATION

(a) A company seeking to conduct inspections of its own pressure vessels shall file an application with the Chief Inspector, accompanied by the Certificate of Accreditation issued by the National Board as an Owner-User Inspection Organization.

(b) The company shall, in its application, designate a supervisor who shall be an engineer within its employ who, upon approval of the application, shall:

(1) ascertain that the company's inspectors, pursuant to Rules .0202 and .0203 of this Section, are issued National Board Commission cards;

(2) supervise inspections of pressure vessels and ensure that an inspection report, signed by the owner-user inspector, is filed at the equipment site;

(3) notify the Chief Inspector of any unsafe pressure vessel that presents a condition of imminent danger;

(4) maintain a master file of inspection records that shall be available for examination by the Chief Inspector or his representative during business hours and contain the following:

(A) identifying each pressure vessel by serial number and abbreviated description; and

(B) showing the date of the last and next scheduled inspection; and

(5) on a date agreed upon with the Chief Inspector, file an annual statement signed by the supervisor showing the number of boilers and certifying that each inspection was conducted pursuant to this Chapter, accompanied by an administrative fee of ~~twenty-five~~ fifty dollars ~~($25.00)~~ ($50.00) per vessel.

(c) Inspection certificates shall not be required for pressure vessels inspected under an owner-user program.

History Note: *Authority G.S. 95-69.11; 95-69.15; 95-69.16;*
Eff. May 29, 1981;
Amended Eff. March 1, 2017; March 1, 2015; January 1, 2009; July 1, 2006; January 1, 1995; March 2, 1992; September 1, 1986;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended December 1, 2021.

Appendix A7:

13 NCAC 13 .0207 is proposed for amendment as follows:

13 NCAC 13 .0207 INSPECTION REPORTS

(a) Inspectors shall file inspection reports with the Chief Inspector:

(1) within 10 working days after the date each ~~certificate~~ inspection is performed; and

(2) immediately for all conditions of imminent danger, or any condition that would result in the insurance company's refusal to issue or continue an insurance policy on the boiler or pressure vessel.

(3) shall include the insurance policy identifier covering any equipment inspected by a special inspector.

(b) Inspectors shall notify the Chief Inspector, in person or by electronic means, upon becoming aware of an accident which renders a boiler or pressure vessel inoperative or causes damage to property, personal injury, or death.

(c) Should the inspector, during the course of making an inspection, find a condition of imminent danger, he shall immediately notify the Chief Inspector, in person or by electronic means, so that steps might be taken to remove the device from service.

History Note: *Authority G.S. 95-69.11; 95-69.14;*

Eff. May 29, 1981;
Amended Eff. July 1, 2006; January 1, 1995;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended December 1, 2021.

Appendix A8:

13 NCAC 13 .0210 is proposed for amendment as follows:

13 NCAC 13 .0210 SHOP INSPECTIONS AND NATIONAL BOARD ~~R STAMP~~ "R" CERTIFICATE QUALIFICATION REVIEWS

(a) Shop Inspections.

(1) Manufacturers or repair firms seeking to employ the Boiler and Pressure Vessel Bureau to act as their Authorized Inspection Agency pursuant to the ASME Code or National Board Inspection Code, shall enter into a written agreement with the North Carolina Department of Labor, Boiler and Pressure Vessel Bureau for this purpose.

(2) An audit of the Deputy Inspector serving as the Authorized Inspector pursuant to Subparagraph (a)(1) of this Rule, and the contracting company in which he or she is working shall be conducted on an annual ~~basis for non-nuclear companies and twice each year for nuclear companies.~~ basis. The contracting company shall pay the audit fees required in Rule .0213 of this Section.

(b) National Board ~~R Stamp~~ "R" Certificate Qualification Reviews

(1) The Chief Inspector, or the Chief Inspector's designee, shall conduct the qualification reviews for issuance or renewal of the National Board ~~R symbol stamp~~ "R" certificate of authorization pursuant to the National Board Inspection Code as adopted, except as provided in Subparagraph (b)(2) of this Rule.

(2) The Chief Inspector or his designee shall not conduct the qualification reviews of those companies for which the Boiler and Pressure Vessel Bureau provides inspection services, or those companies which specifically request the review be conducted by the National Board.

(3) A review to be conducted by the Boiler and Pressure Vessel Bureau shall be scheduled upon receipt of request by the National Board.

History Note: *Authority G.S. 95-69.11; 95-69.14;*
Eff. May 29, 1981;
Amended Eff. March 1, 2015; October 1, 2008; July 1, 2006; January 1, 1995;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018; Amended December 1, 2021.

Appendix A9:

13 NCAC 13 .0211 is proposed for amendment as follows:

13 NCAC 13 .0211 CERTIFICATE INSPECTIONS

(a) A commissioned inspector shall inspect all boilers and pressure vessels at the time of installation and at regular intervals thereafter, as provided in this Rule.

(b) Subject to the exceptions in Paragraphs (c) and (d) of this Rule, and after seven days notice is given to the owner or user, an inspector shall conduct an internal inspection of a high pressure boiler at the time of installation and annually thereafter. An external inspection shall be conducted ~~annually~~ a minimum of once every 12 months while the boiler is in operation. The inspector shall ensure that the safety controls are operating as required. Issuance of the inspection certificate shall be based on the results of the internal inspection; however, if the inspector determines during the external inspection that an unsafe condition exists that is likely to result in serious personal injury or property damage, the inspector shall recommend to the Chief Inspector that the certificate of operation be revoked pursuant to 13 NCAC 13 .0301(d).

(c) In place of the first internal inspection of a new high pressure boiler, an inspector may conduct an external inspection if the inspector determines that data sufficient to determine compliance with the rules of this Chapter can be gathered from an external inspection. This shall not apply to relocated used boilers or those for which extended inspection certificates are being requested.

(d) Miniature boilers, coil-type watertube boilers, and boilers heating a fluid other than water which do not produce steam or vapor operating as high pressure boilers shall undergo an external inspection annually. Miniature boilers, coil-type watertube boilers and boilers heating a fluid other than water operating as heating boilers shall undergo an external inspection biennially. Hobby boilers, locomotive boilers and exhibition boilers shall be inspected annually, at the beginning of the season when they are anticipated to be operated.

(e) Low pressure boilers and pressure vessels, except hydropneumatic storage tanks, shall undergo an external inspection ~~biennially.~~ biennially while in operation.

(f) Owner-user inspectors shall conduct inspections for pressure vessels as prescribed in this Rule.

(g) Inspectors may order coverings removed, internal inspections, external inspections, removal of internal parts, testing or calibration of controls, indicating and safety devices and pressure tests whenever conditions warrant further evaluation of the pressure equipment. The inspector may also require the boiler to be started to verify the operating controls.

(h) Hydropneumatic storage tanks shall undergo an external inspection every four ~~years.~~ years while in operation.

(i) When the inspector or Chief Inspector determines that a certificate cannot be issued as a result of an inspection, the boiler or pressure vessel shall be reinspected after the necessary repairs are made.

(j) Inspections shall be conducted in accordance with the National Board Inspection Code. The inspector may require controls, indicating and safety devices to be disassembled, tested, checked or calibrated as necessary to ensure their proper operation.

(k) The Chief Inspector may extend an existing inspection certificate for a high pressure boiler for a period not exceeding 90 days beyond the certificate expiration date, should an inspection at the specified period result in undue hardship for the owner or user. The owner or user shall submit a written request to extend an existing inspection certificate, providing justification for an extension. The request shall include a report from a commissioned inspector of an external inspection which shall have been conducted no earlier than 60 days before the certificate expiration date, and the inspection report shall include a recommendation from the inspector for an extension to the inspection certificate.

(l) The inspection frequency established by this Rule may be modified by the Chief Inspector for individual boilers and pressure vessels if the Chief Inspector determines that due to unique conditions, the frequency established herein is not appropriate, and that the safety attained by the normal inspection frequency will be otherwise obtained. Requirements for extended certificates for pressure equipment are detailed in Rule .0214 of this Chapter. Pressure vessels in "Locked High Radiation" areas may be certified for up to five years and may be inspected in accordance with Paragraph (m) of this Rule.

(m) Pressure retaining items which contain highly hazardous chemicals or biological elements that require level B personal protective equipment, or are in highly hazardous areas or pressure retaining items containing radioactive materials causing the pressure equipment to be classified as "Locked High Radiation," may be inspected remotely by video provided:

(1) There is a listing of all the items under this criterion at the site. The list shall be kept current by the owner/user and any additions or deletions shall be kept current. Prior to inspection the inspector shall review the last inspection certificate, the ASME data report, any National Board ("NB") repair/alteration forms and any records of testing performed during the certificate period;

(2) Each item shall be inspected by means of live video feed that is monitored by the inspector. The inspector shall remain in radio contact with the individual operating the video equipment;

(3) The inspector shall be in proximity to the item and shall witness the video equipment operator enter the location of the item;

(4) A scan as complete as possible (within the limitations of the equipment) of all the pressure boundaries shall be witnessed by the inspector;

(5) The ASME nameplate shall be viewed as well as the ASME/NB nameplate on any pressure relieving device on the item;

(6) Follow up inspections to verify the correction of deficiencies can be performed with a video inspection using the items outlined herein by the inspector;

(7) The inspector shall submit an inspection report for each pressure retaining item at intervals specified in this Rule and the report shall be annotated indicating that the item was inspected pursuant to this Paragraph; and

(8) Any incident that renders the item inoperative shall be reported to the Bureau by the owner/user or the inspector within 24 hours.

History Note: *Authority G.S. 95-69.11; 95-69.14; 95-69.17;*
Eff. May 29, 1981;
Amended Eff. August 1, 2011; July 1, 2006; January 1, 1995; March 2, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018~~. 2018;
Amended December 1, 2021.

Appendix A10:

13 NCAC 13 .0213 is proposed for amendment as follows:

13 NCAC 13 .0213 CERTIFICATE AND INSPECTION FEES

(a) An owner shall pay a ~~thirty-five~~ fifty dollar ~~($35.00)~~ ($50.00) certificate and processing fee to the North Carolina Department of Labor for each boiler or pressure vessel inspected by an Insurance Inspector and found to be in compliance with the rules in this Chapter.

(b) An owner shall pay an inspection and certificate fee to the North Carolina Department of Labor for each boiler or pressure vessel inspected by a Deputy Inspector as follows:

Boilers - An inspection of a boiler where the heating surface is: External Inspection Internal Inspection

Less than 500 sq. ft.	$50.00	$85.00
500 or more sq. ft. but less than 5000 sq. ft.	$120.00	$235.00
5000 or more sq. ft.	$330.00	$600.00
Cast iron boilers	$50.00	$80.00
Locomotive boilers (Antique Exhibition/Show)	N/A	$150.00
Exhibition boilers (Antique Exhibition/Show)	N/A	$50.00
Hobby boilers	N/A	~~$35.00~~ $50.00
Pressure Vessels - An inspection of a pressure vessel, other than a heat exchanger, where the product of measurement in feet of the diameter or width, multiplied by its length is:	External Inspection	Internal
~~Inspection~~		
~~Less than 20~~	~~$40.00~~	~~$45.00~~
~~20 or more but~~ less than 50	$50.00	$60.00
50 or more but less than 70	$85.00	$135.00
70 or more	$135.00	$190.00
Heat Exchangers - An inspection of a heat exchanger, where the heating surface is:	External Inspection	
Less than 500 sq. ft.	~~$45.00~~ $50.00	
500 or more sq. ft. but less than 1000 sq. ft.	$60.00	
1000 or more sq. ft. but less than 2000 sq. ft.	$90.00	
2000 or more sq. ft. but less than 3000 sq. ft.	$130.00	
3000	$180.00	

(c) In addition to the fees established in Paragraph (b) herein, a fee of ninety dollars ($90.00) per hour, including travel time, plus each expense allowed by G.S. 138-6 and 138-7 and the standards and criteria established thereto by the Director of the Budget, at the applicable state rate shall be paid to the North Carolina Department of Labor for each special inspection as defined by 13 NCAC 13 .0101(46) and for all inspections performed outside of normal working hours as defined by 13 NCAC 13 .0101(31).

(d) A fee of three-hundred fifty dollars ($350.00) per one-half day (four hours) or any part of one-half day or five-hundred sixty-dollars ($560.00) for one day (four to eight hours) plus, in either case, each expense allowed by G.S. 138-6 and 138-7 and the standards and criteria established thereto by the Director of the Budget, at the applicable state rate shall be paid to the North Carolina Department of Labor for each shop inspection as defined by 13 NCAC 13 .0101(45).
(f) A fee of four hundred fifty dollars ($450.00) per one-half day (four hours) or any part of one-half day or six hundred ninety dollars ($690.00) for one day (four to eight hours), plus, in either case, each expense allowed by G.S. 138-6 and 138-7 and the standards and criteria established thereto by the Director of the Budget, at the applicable state rate shall be paid to the North Carolina Department of Labor for audits as defined by 13 NCAC 13 .0101(4).

History Note: *Authority G.S. 95-69.11;*
Eff. May 29, 1981;
Amended Eff. January 1, 1995; March 2, 1992; September 1, 1986;
Temporary Amendment Eff. March 11, 1997;
Temporary Amendment Eff. March 11, 1997 expired on December 27, 1997;
Temporary Amendment Eff. December 10, 1997;
Amended Eff. March 1, 2015; July 1, 2006; March 1, 2006; August 1, 1998;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended December 1, 2021.

Appendix A11:

13 NCAC 13 .0214 is proposed for amendment as follows:

13 NCAC 13 .0214 EXTENDED PRESSURE EQUIPMENT OPERATING CERTIFICATES

(a) G.S. 95-69.16 and 13 NCAC 13 .0211(l) of this Chapter allows the Commissioner, through the Chief Inspector, to modify the inspection frequency for individual pressure equipment if it is determined that due to unique conditions, the new frequency will provide for the safety attained by the normal inspection frequency. Proper maintenance programs, the condition of the pressure equipment and a baseline inspection help to determine if the equipment is eligible for extended

certification. The Chief Inspector may allow certificate renewal frequencies of up to three years. Companies wishing to have their pressure equipment given an extended certification must apply by letter to the Chief Inspector requesting extended certification.

(b) For a first time extended inspection frequency, the following shall apply to both new and existing equipment:

(1) Base Line Inspections: At the outset of an extended inspection frequency, a base line inspection must be conducted of all inside and outside accessible pressure boundaries. The inspected area shall be examined visually by a North Carolina Department of Labor, Boiler and Pressure Vessel Bureau Inspector Supervisor along with a Deputy Inspector for evidence of cracking, discoloration, wear, pitting, bulging, blistering, excessive corrosion and erosion, arc strikes, gouges, dents and other signs of surface irregularities. Areas that are suspect shall be non-destructively examined by a method acceptable to the Inspector Supervisor and Deputy Inspector. For areas which are still suspect after such examination, a more thorough supplemental examination and engineering evaluation of the discontinuities shall be conducted and discussed with the Chief Inspector or designee. At that time, a decision shall be rendered on the required repair of the discontinuity;

(2) Inspection Mapping and Records: An inspection grid map shall be constructed for each pressure component detailing precisely the areas found suspect. The grid shall not exceed four inch square. Suspect area shall be described in relevant details and photographs of such areas shall be taken. Records shall be kept and made available to the Deputy Inspector prior to the next required inspection;

(3) Base Line Inspection of Boiler Tubes: The boiler tubes shall be examined by nondestructive examination. Tubes shall be examined for wear, corrosion, erosion, thinning, bulging, blistering, dents, discoloration, cracking and any other surface irregularities. Areas which are suspect shall be noted and discussed with the Inspector Supervisor and Deputy Inspector; and

(4) Boiler Tube Inspection Mapping and Record: Where suspect tubes are identified, the boiler tubes shall be numbered in a logical sequence and the location of any suspect area shall be precisely defined and described in relevant details. Photographs of such areas shall be taken. Records shall be kept and made available to the Inspector Supervisor and Deputy Inspector prior to the next required inspection.

(c) Scheduling of Inspections for Extended Certificate: Approximately two months prior to a scheduled outage in which the boiler may be inspected, and prior to the current certificate expiration, the owner shall do the following in order to initiate the inspection process:

(1) Send a letter addressed to the Chief Inspector requesting the extended certificate;

(2) Contact the North Carolina Department of Labor, Boiler and Pressure Vessel Bureau at 919-707-7918 and request to speak with an Inspector Supervisor for the purpose of scheduling the inspections required for extending the boiler inspection certificate expiration for to up to 36 months (have the North Carolina identification number available); and

(3) Agree with the Inspector Supervisor and Deputy Inspector on a date to meet for the external inspection of the boiler and to review reports. The boiler must be operating when the external inspection is done. Heat recovery boilers with less than one percent capacity factor per year may be

excluded from the need to operate during the external inspection but a letter requesting the exclusion must be sent to the Chief Inspector stating the capacity factor for the year.

(d) External Inspection: The following reports must be available to the Inspector Supervisor and Deputy Inspector at the external inspection:

(1) NBIC R1 forms with job folders (for the past five years for initial inspections and since the previous inspection for renewals);

(2) A list of major modifications scheduled and those modifications done since the last internal inspection with the NBIC R2 forms;

(3) VR forms (for the past five years for initial inspections and since the previous inspection for renewals);

(4) ~~Remaining life analysis (RLA)~~ Fitness for Service (National Board NB-403 or equivalent) reports for headers (for the past five years for initial inspections and since the previous inspection for renewals);

(5) Side elevation drawing of the boiler (8 ½ inches by 11 inches);

(6) Steam & Mud drums - Original drum thickness, drawings and P4's if available;

(7) Copy of the last operating certificate and copies of the last three years of inspection reports;

(8) Reports of annual external inspections (by owner's insurance company or a Boiler and Pressure Vessel Bureau Deputy Inspector; and

(9) Attention must be paid to the areas determined suspect by previous inspections.

(e) Internal Inspection: Following are the required inspections during the outage;

(1) Prior to the outage the safety valves must be inspected. Schedule the operational test for all safety valves after the unit comes back up. Upon a successful operational test, the repair organization will affix an updated inspection tag to the valve. Request the Deputy Inspector to return and verify the updated inspection tag. In lieu of operational tests, it is acceptable to replace safety valves with new valves or valves reworked by a National Board "VR" or "NVR" authorized company;

(2) Inspect the pressure equipment internally; and

(3) Inspect the drums and shells using the following methods:

(A) Examine penetrations into the drum/shell wall for cracking: if the nozzles are visible from inside the drum/shell, then a visual examination is satisfactory; otherwise ultrasonically examine the nozzles, from the outside surface, of at least 20 percent of the pressure equipment nozzles;

(B) Visually examine inside the heads; and

(C) Crawl through the drum/shell for a visual examination if possible.

(f) Setting the Certificate Interval: The Deputy Inspector will inform the owner whether the inspection records and condition of the pressure equipment meet the requirements necessary for requesting the Chief Inspector to extend the inspection certificate. If the necessary requirements are met, the Deputy Inspector will submit his inspection report to the Chief Inspector with the recommendation for up to a three-year certificate.

(g) Follow-up and Interim Inspections: External inspections of high pressure boilers are required six months after the certificate renewal, and then annually thereafter. The external inspections may be performed by the Boiler and Pressure Vessel Bureau Deputy Inspectors or by the owner's insurance inspector. The results of the inspection must be submitted to the North Carolina Department of Labor, Boiler and Pressure Vessel Bureau on the appropriate inspection form as provided by the Chief Inspector.

History Note: *Authority G.S. 95-69.11; 95-69.14; 95-69.16;*
Eff. July 1, 2011;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, 2018;
Amended Eff. December 1, 2021; January 1, 2020.

Appendix A12:

13 NCAC 13 .0303 is proposed for amendment as follows:

13 NCAC 13 .0303 INSPECTIONS REVEALING DEFICIENCIES

(a) The owner or user shall complete any required repairs or corrective action and request an additional inspection within 60 calendar days of the inspection, except in cases where the boiler or pressure vessel is removed from service, in which case the owner or user shall send in written confirmation, signed by the owner or user, that use of the boiler or pressure vessel has been discontinued and that the boiler or pressure vessel has been removed from the source of energy.

(b) Upon notification by the inspector of a boiler or pressure vessel for which continued operation creates a condition of imminent danger, the Chief Inspector shall determine if the recommendations of the inspector are valid, and if so, the Chief Inspector shall notify the owner or user by the most expedient means possible, followed by written notification within 15 calendar days stating that the use of the boiler or pressure vessel shall be discontinued immediately.

(c) The owner or user may continue operation of the boiler or pressure vessel, including those boilers or pressure vessels that are condemned, during the 60 day period, except that this provision shall not apply to boilers and pressure vessels after notification by the Chief Inspector to the owner or user that a condition of imminent danger exists.

(d) After completion of any required repairs or corrective action, the boiler or pressure vessel shall be reinspected to the extent necessary to verify satisfactory completion of the required repairs or corrective action.

(e) An owner shall pay a fee of ~~forty~~ fifty dollars ~~($40.00)~~ ($50.00) to the North Carolina Department of Labor for each reinspection or follow-up inspection conducted by Deputy Inspectors.

History Note: *Authority G.S. 95-69.11;*
Eff. May 29, 1981;
Amended Eff. March 1, 2015; July 1, 2006; January 1, 1995;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended December 1, 2021.

Appendix A13:

13 NCAC 13 .0401 is proposed for amendment as follows:

SECTION .0400 – GENERAL REQUIREMENTS

13 NCAC 13 .0401 DESIGN AND CONSTRUCTION STANDARDS

(a) The design, construction, installation, inspection, stamping, certification, and operation of all boilers and pressure vessels shall conform to the rules in this Chapter and the accepted design and construction code.

(b) Repairs and alterations to boilers and pressure vessels shall conform to the requirements of the National Board Inspection Code, except as provided in Paragraph (g) of this Rule.

(c) The rules of this Chapter shall control when any conflict is found to exist between the Rules and the accepted design and construction code or the National Board Inspection Code.

(d) Welded repairs and alterations shall be made only by an individual or organization in possession of a valid certificate of authorization for use of the National Board "R" symbol stamp, except as provided in Paragraph (g) of this Rule. Repairs and alterations shall be reported on National Board "R1" and "R2" reports respectively, as required by the NBIC. These reports are available through the National Board of Boiler and Pressure Vessel Inspectors. The reports, along with supplements used, shall be submitted to the Chief Inspector within 60 days of the completion of the work conducted. Repair and alteration reports shall be annotated with the appropriate NC identification number for the pressure equipment repaired.

(e) In such cases where removal of a defect in a pressure-retaining item is not practical at the time of discovery, with approval of the Chief Inspector, the repair shall be conducted in compliance with the NBIC, Part 3 Repairs and Alterations, Repair of Pressure-Retaining Items Without Complete Removal of Defects. The Chief Inspector may be contacted in writing at 1101 Mail Service Center, Raleigh, NC 27699-1101 or via telephone at (919) 707-7918.

(f) Repairs of safety valves or safety relief valves shall be made by an individual or organization in possession of a valid certificate of authorization for use of the National Board "VR" symbol stamp.

(g) Welded repairs and alterations to exhibition (historical) boilers of riveted or welded construction may be conducted by a welder who has been qualified in accordance with the ASME Boiler and Pressure Vessel Code, Section IX, Welding and Brazing Qualifications.

History Note: *Authority G.S. 95-69.11;*
Eff. May 29, 1981;
Amended Eff. October 1, 2014; July 1, 2011; January 1, 2009; July 1, 2006; January 1, 1995; February 1, 1989; February 1, 1985; June 1, 1982;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, 2018;
Amended Eff. <u>December 1, 2021;</u> January 1, 2020.

Appendix A14:

13 NCAC 13 .0402 is proposed for amendment as follows:

13 NCAC 13 .0402 NORTH CAROLINA STAMPING AND REGISTRATION

(a) Boilers and pressure vessels shall be registered with the National Board and shall bear the National Board stamping as follows:

(1) high pressure boilers installed after November 2, 1946;

(2) heating boilers (except cast iron or cast aluminum boilers) installed after January 1, 1976;

(3) pressure vessels installed after January 1, 1979; and

(4) hydropneumatic storage tanks installed after January 1, 1986.

(b) Boilers and pressure vessels may be exempted from the requirement for National Board registration provided the owner or user submits a letter requesting a variance to the Chief Inspector giving reason for the request. The requestor shall enclose with the letter a copy of the original manufacturer's data report. The documentation shall be reviewed by the Chief Inspector to determine if the information is complete and traceable to the boiler or pressure vessel. The owner or user shall be advised of the Chief Inspector's decision within 30 working days with regard to the approval or disapproval of the request.

(c) Electric boilers shall be listed with a qualified testing laboratory recognized by the Occupational Safety and Health Administration as a nationally recognized testing laboratory (NRTL) pursuant to 29 CFR 1910.7.

(d) The owner or user shall, upon request of the inspector, provide a manufacturer's data report for the boiler or pressure vessel.

(e) When a new boiler or pressure vessel is installed, or when an existing installation receives its first certificate inspection, a Deputy Inspector shall conduct the first inspection and apply a metal tag embossed or stamped with the North Carolina identification number (e.g., NC000) to the boiler or pressure vessel on or adjacent to the manufacturer's nameplate or stamping. If the boiler or pressure vessel is constructed of materials having adequate thickness to allow stamping, the identification number may be stamped onto the boiler or pressure vessel.

(f) The owner or user shall keep all required stamping exposed at all times unless a clearly marked removable cover is installed so that it may be readily accessible at any time.

History Note: *Authority G.S. 95-69.11; 95-69.14;*
Eff. May 29, 1981;
Amended Eff. July 1, 2006; January 1, 1995; February 1, 1989; November 1, 1986;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018~~. 2018;
Amended December 1, 2021.

Appendix A15:

13 NCAC 13 .0405 is proposed for amendment as follows:

13 NCAC 13 .0405 PRESSURE RELIEF DEVICES

(a) Boilers and pressure vessels shall be protected from overpressurization by a pressure relief device. All pressure relief devices installed on any boiler or pressure vessel shall be constructed and stamped in accordance with the accepted design and construction code.

(b) All pressure relief devices shall be stamped and capacity certified by the manufacturer indicating compliance with the National Board. The stamping shall include the set pressure (that pressure at which the valve is set to open) and the relieving capacity (the rate of flow).

(c) High pressure boilers with over 500 square feet of heating surface and electrically fired boilers having an input in excess of 1100 kW shall be provided with a minimum of two safety valves. For high pressure boilers with a combined bare tube and extended water-heating surface area exceeding 500 square feet, one safety valve is required if the design steam generating capacity of the boiler is less than 4,000 pounds of steam per hour.

(d) Safety valves and safety relief valves for heating boilers shall have a seat diameter of not less than ½ inch, and not more than 4 ½ inches.

(e) Pressure relief devices shall have a set pressure and relieving capacity in accordance with the accepted design and construction code requirements for the type equipment on which the pressure relief device is installed. At least one pressure relief device shall have the set pressure set at not greater than the maximum allowable working pressure of the boiler or pressure vessel. The relieving capacity shall not be less than the minimum required relieving capacity indicated on the manufacturer's name plate or stamping, or as otherwise required by the accepted design and construction code. Safety relief valves installed on water heaters shall be of the combination temperature and pressure relieving ~~type.~~ type, or as permitted by the accepted design and construction code.

(f) All safety valves installed on high pressure boilers shall be installed on top of the boiler, or in the case of watertube boilers on top of the upper drum, with the spindle in the vertical position. All safety valves and safety relief valves installed on heating boilers shall be on top of the boiler or on an opening at the highest practicable part of the side of the boiler, but in no case shall the safety valve be installed below the normal operating level for a steam boiler. Safety valves and safety relief valves installed on hot water heating boilers, hot water supply boilers, and steam heating boilers shall be installed with the spindles mounted in the vertical position. Safety relief valves for water heaters may be installed with the spindles mounted in either the vertical or horizontal position. In no case may pressure relief devices be mounted on ~~appurtenances.~~ appurtenances, unless permitted by the accepted design and construction code.

(g) The distance between the pressure relief device outlet nozzle on the boiler and the pressure relief device inlet shall be kept to a minimum consistent with the size of the pressure relief device and the pipe sizes required. In no case shall any valves or stops be installed in the inlet piping to the pressure relief device or in the discharge piping from the pressure relief device. The boiler outlet and the piping between the boiler outlet and the pressure relief device shall have a cross sectional area of not less than the cross sectional area of the pressure relief device inlet.

(h) Discharge piping from the pressure relief device outlet shall be the same size, or larger, than the outlet pipe connection on the pressure relief device and shall be extended full size to a safe location. A safe location shall be interpreted to mean a location within six inches of the finished floor of the mechanical room, to a location outside the building terminating a safe distance above the building roof or to a location outside the building within six inches above the finished grade. For vessels such as organic fluid heaters where the medium presents a hazard, the discharge shall be to a containment vessel large enough to hold all anticipated

pressure relief discharges. When pressure relief device discharge piping is routed vertically, piped drainage shall be provided by the use of drip pan elbows installed on the outlet of each pressure relief device served.

(i) Multiple pressure relief devices may be piped to the point of discharge using a common discharge header pipe. The header pipe size shall have a diameter sufficient to provide an equivalent cross-sectional area equal to or larger than the sum of the cross-sectional areas of the pressure relief device outlets to which it is connected.

(j) Pressure relief devices on pressure vessels may be installed with the spindle in the vertical or horizontal position. The pressure relief device inlet, discharge piping, and the requirement for piping the discharge to a safe location shall be the same as noted for boilers. The requirement for discharge piping is optional for pressure vessels used to store compressed air, inert gasses, water, or other fluids no more hazardous than water.

(k) Pressure relief devices for direct fired pressure vessels and for those used as air compressor storage tanks shall be installed directly on the pressure vessel with no intervening valves. Pressure relief devices for all other pressure vessels may be installed directly on the pressure vessel or in the piping system, except as modified in this Rule. ~~A stop valve may be installed between a pressure vessel and the pressure relief device if one of the following is satisfied:~~

~~(1) the stop valve is normally locked in the open position, and may only be closed when there is a full time attendant stationed at the stop valve when it is in the closed position for testing purposes; or~~

~~(2) isolating the pressure relief device from the pressure vessel by closing the stop valve also isolates the pressure vessel from the source of pressure.~~

(l) A stop valve may be installed between a pressure vessel and the pressure relief device if one of the following is satisfied:

(1) the stop valve is normally locked in the open position, and may only be closed when there is a full time attendant stationed at the stop valve when it is in the closed position for testing purposes; or

(2) isolating the pressure relief device from the pressure vessel by closing the stop valve also isolates the pressure vessel from the source of pressure.

~~(l)~~ (m) Pressure relief devices shall be sealed to prevent the valve from being taken apart without breaking the seal. Pressure relief devices for boilers and pressure vessels containing air, water, or steam, shall be provided with a test lever, pull test ring or other mechanism which may be used to test the operation of the valve. Pressure relief devices which are required to be provided with a testing mechanism shall be readily accessible for testing from the work platform or other means, such as a pull chain, shall be provided so that the pressure relief device can be tested from the work platform.

~~(m)~~ (n) When a hot water supply boiler or storage vessel is heated indirectly by steam or hot water in a coil or pipe, the pressure relief device capacity shall be determined by the heating surface available for heat transfer, and the pressure relief device shall not be less than 1 inch diameter.

~~(n)~~ (o) A person shall not:

(1) attempt to remove, tamper, alter or conduct any work on any pressure relief device while the boiler or pressure vessel is in operation, except as permitted by the accepted design and construction code or the National Board Inspection Code;

(2) load a pressure relief device in any manner to maintain a working pressure in excess of the maximum allowable working pressure as stated on the inspection certificate;

(3) operate any boiler or pressure vessel without the safety appliances as described in this Chapter, the accepted design and construction ~~code,and~~ code, and the National Board Inspection Code;

(4) use a pressure relief device required by this Chapter as an operating pressure control; or

(5) remove the seal and attempt to adjust or otherwise work on a pressure relief device unless the person/company removing the seal is a authorized holder of a National Board "VR" stamp.

~~(o)~~ (p) If an owner or user can demonstrate that a pressure vessel is operating in a system of such design that the maximum allowable working pressure cannot be exceeded, the Chief Inspector shall waive the requirement for installation of a pressure relief device if the pressure vessel meets the safety requirements greater than or equal to the level of protection afforded by this Chapter and the accepted design and construction code, and does not pose a danger to persons or property.

~~(p)~~ (q) Pressure relief device piping shall be supported so that the piping is supported with no additional force being applied to the pressure relief device.

~~(q)~~ (r) Hydropneumatic storage tanks shall be provided with a relief valve of not less than ¾ inch NPS and rated in standard cubic feet per minute (SCFM). The relief valve shall be installed on top of the tank. This rule applies to any equipment installed after January 1, 2009. Preexisting installed equipment shall meet the criteria effective on January 1, 1995 and does not require a change-out of the existing relief valve unless the current relief valve becomes defective.

~~(r)~~ (s) Dead weight safety valves are prohibited from use on any boiler or pressure vessel regulated by this Chapter.

~~(s)~~ (t) When the minimum safety valve relieving capacity is not found on the data plate, the following guide may be used to determine the required safety valve capacity for steam boilers. The factor noted in the table shall be multiplied by the heating surface of the boiler to determine required safety valve relieving capacity. Additional requirements found in NBIC Part 4, Section 2 for calculating heating surface shall be utilized.

Table-0405 Guide for Estimating Steaming Capacity Based on Heating Surface		
	Firetube Boilers	Watertube Boilers
Boiler heating surface:		
Hand-fired	5	6
Stoker-fired	7	8

Oil, gas, or pulverized fuel	8	10
Waterwall heating surface:		
Hand-fired	8	8
Stoker-fired	10	12
Oil, gas, or pulverized fuel	14	16
Copper-finned watertube		
Hand-fired	N/A	4
Stoker-fired	N/A	5
Oil, gas, or pulverized fuel-fired	N/A	6

History Note: *Authority G.S. 95-69.11; 95-69.14;*
Eff. May 29, 1981;
Amended Eff. June 1, 1992; February 1, 1985;
Recodified from 13 NCAC 13 .0404 Eff. January 1, 1995;
Amended Eff. January 1, 2009; July 1, 2006; January 1, 1995;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended Eff. December 1, 2021.

Appendix A16:

13 NCAC 13 .0406 is proposed for amendment as follows:

13 NCAC 13 .0406 HIGH PRESSURE OR TEMPERATURE LIMIT CONTROL

(a) Each automatically fired steam boiler or system of commonly connected steam boilers shall have at least one steam pressure control that will shut off the fuel supply to each boiler or system of commonly connected boilers when the pressure reaches a preset maximum operating pressure. In addition to the required

operating pressure control, each individual automatically fired steam boiler shall have a high steam pressure limit control that will shut off the fuel supply to the boiler to prevent pressure in excess of the maximum allowable working pressure. The high limit control shall be equipped with a manual reset which shall prevent the boiler from being fired after the maximum pressure has been reached until the operator resets the switch manually. Steam boilers shall be provided with a syphon(s) or equivalent which will provide a water seal and protect the pressure control(s) from being damaged by the steam.

(b) Each automatically fired hot water heating boiler, hot water supply boiler, water heater or each system of commonly connected hot water heating or supply boilers shall have at least one temperature-actuated control to shut off the fuel supply when the system water reaches a preset operating temperature. In addition to the required temperature control, each individual automatically fired hot water heating boiler, hot water supply boiler, and water heater shall have a high temperature limit control that will prevent the water temperature from exceeding the maximum allowable temperature for the respective equipment. The high limit control for the hot water heating boilers and hot water supply boilers that are either stamped with the ASME "H" ~~symbol~~ designator or are not constructed in accordance with the ASME Codes shall be equipped with a manual reset which shall prevent the boiler from being fired after the maximum temperature has been reached until the operator resets the switch manually. A manual reset is not required for boilers that bear the AMSE “HLW” designator, or for unfired pressure vessels.

(c) Automatic resets or remote resets by electronic means are prohibited. The manual reset may be incorporated in the high limit control. Where the reset device is separate from the high limit control, a means shall be provided to indicate actuation of the high limit control. Each high limit and operating control shall have its own sensing element and operating switch.

History Note: *Authority G.S. 95-69.11; 95-69.14;*
Eff. May 29, 1981;
Recodified from 13 NCAC 13 .0407 Eff. January 1, 1995;
Amended Eff. July 1, 2011; July 1, 2006; January 1, 1995;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended Eff. December 1, 2021.

Appendix A17:

13 NCAC 13 .0409 is proposed for amendment as follows:

13 NCAC 13 .0409 AUTOMATIC LOW-WATER FUEL CUTOFF CONTROLS AND WATER-FEEDING DEVICES

(a) Each automatically fired steam or vapor boiler, except miniature boilers, shall meet the following criteria:

(1) Have at least two automatic low-water fuel cutoff devices;

(2) One of the low-water fuel cutoff devices may also be used to regulate the normal water level;

(3) Each cutoff device shall be installed to prevent startup and to shut down the boiler fuel or energy supply automatically when the surface of the water falls to a level not lower than the lowest visible part of the gauge glass;

(4) One control shall be set to function ahead of the other. The lower fuel cutoff device shall be equipped with a manual reset which shall prevent the boiler from being fired after the low water limit has been reached until the operator resets the switch manually; and

(5) The low-water fuel cutoffs shall be attached directly to the boiler or to the water column with no stops or valves. For float type low-water fuel cutoffs installed external to the boiler, each device shall be installed in individual chambers which shall be attached to the boiler by separate pipe connections below the waterline. If the low-water fuel cutoff is connected to the boiler by pipe and fittings, no shut off valves of any type shall be placed in such pipe. A cross or equivalent fitting shall be placed at every right angle turn to facilitate cleaning. Piping from the boiler shall be not less than 1 inch NPS. Low-water fuel cutoff designs embodying a float and float bowl shall have a vertical straightaway valved drain pipe of not less than ¾ inch NPS at the lowest point in the water-equalizing pipe connections by which the bowl and the equalizing pipe can be flushed and the device tested.

(b) Each automatically fired hot water heating boiler with heat input greater than 400,000 Btu/hr (117 kW) shall meet the following criteria:

(1) Be protected by a low-water fuel cutoff intended for hot water service;

(2) The fuel cutoff device shall be installed to prevent startup and to shut down the boiler fuel or energy supply automatically when the surface of the water falls to a level not lower than the lowest safe permissible water level established by the boiler manufacturer;

(3) The fuel cutoff device shall be equipped with a manual reset which shall prevent the boiler from being fired after the lowest water level has been reached until the operator resets the switch manually;

(4) The low-water fuel cutoff installed in a hot water heating boiler system may be installed anywhere in the system above the lowest safe permissible water level established by the boiler manufacturer so long as there is no isolation valve installed between the device and the boiler. Connections to the system shall be not less than 1 inch NPS; and

(5) A means shall be provided for testing the operation of the low-water fuel cutoff on a hot water heating boiler system without resorting to draining the entire system.

(c) Coil type boilers or watertube boilers requiring forced circulation to prevent overheating of the coils or tubes may have a flow-sensing device installed at or near the boiler proper, in lieu of a low-water fuel cutoff, to automatically cut off the fuel supply when the circulation of flow is interrupted. If there is a definitive water line, a low-water fuel cutoff complying with the forgoing shall be provided in addition to the flow-sensing device.

(d) Electric boilers where uncovering of the electrical element can lead to an unsafe condition shall be equipped with a low-water fuel cutoff device. In the case of electrode type boilers, where the reduction in water level provides a self-limiting control on heat input, a low-water cutoff control is not required.

(e) Automatically fired boilers shall be provided with a system to automatically maintain a constant water level so that the water level cannot fall below the lowest safe water line. <u>This requirement does not apply to hot water heating boilers used in closed-loop radiant floor heating systems when installed in accordance with the manufacturer's instructions.</u>

(f) Low water fuel cutoff devices embodying a float and float bowl shall be installed so that the boiler feedwater or makeup water cannot be introduced through the float chamber.

History Note: *Authority G.S. 95-69.14;*
Eff. January 1, 1982;
Recodified from 13 NCAC 13 .0416 Eff. January 1, 1995;
Amended Eff. July 1, 2011; January 1, 2009; July 1, 2006; January 1, 1995;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018~~. <u>2018;</u>
<u>Amended Eff. December 1, 2021.</u>

Appendix A18:

13 NCAC 13 .0420 is proposed for amendment as follows:

13 NCAC 13 .0420 FIRING MECHANISM CONTROLS

(a) Automatically fired boilers and pressure vessels shall be provided with firing mechanism controls.

(b) Oil, gas-fired, and electrically heated boilers shall be equipped with primary (flame safeguard) safety controls, safety limit switches, and burners or electric elements that are listed and labeled with a testing laboratory recognized by the Occupational Safety and Health Administration as a nationally recognized testing laboratory (NRTL) pursuant to 29 CFR 1910.7.

(c) Automatically fired boilers installed after January 1, 2007, shall be provided with a remote emergency fuel shut-off switch marked for easy identification. The remote shut-off switch shall be located outside each door of the room in which the boiler is located. Alternatively, the shut-off switch may be located just inside the entrance door(s) where the equipment is located. If there is more than one door to the boiler room, there shall be a switch located at each door designed for primary emergency egress from the boiler room. Boilers that bear the ASME "HLW" designator are not required to be provided with a remote emergency fuel shut-off switch.

(d) For installations which are gas-fired, the burners used shall conform to the North Carolina Fuel Gas Code in effect at the time of installation.

History Note: *Authority G.S. 95-69.11; 95-69.14;*
Eff. January 1, 1995;
Amended Eff. February 1, 2009; July 1, 2006;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended December 1, 2021.

Appendix A19:

13 NCAC 13 .0422 is proposed for amendment as follows:

13 NCAC 13 .0422 EXHIBITION BOILERS

~~In addition to the requirements outlined in this Chapter for manually fired boilers, exhibition~~ Exhibition boilers shall meet the following requirements:

(1) Exhibition boilers that are not built to the ASME Code shall not be operated above 125 psi without specific written approval by the Chief Inspector who shall base such approval on documentation and calculations submitted by the owner. These documents and an inspection shall support higher pressure ratings.

(2) Safety relief valves shall not exceed the maximum allowed working pressure and shall be ASME/NB certified valves.

(3) Each boiler shall have as a minimum;

(a) A properly operating pressure gauge which shall be approximately double the pressure to which the safety relief valve is set but in no case shall it be less than 1 1/2 times the set pressure.

(b) A safety relief valve which shall be capable of protecting the boiler from over pressurization.

(c) A water gauge glass

(4) When fusible plugs are used, they shall ~~be replaced every two years with appropriately sized plugs of the required material.~~ conform to NBIC Part 2 as applicable.

(5) A hydrostatic test may be required by the inspector if, in his opinion, it is necessary to prove the integrity of the pressure boundary. The hydrostatic test shall not exceed ~~100%~~ 125% of the maximum allowed working pressure of the vessel or the set pressure of the safety valve, whichever is greater.

(6) Upon successful completion of the inspection and payment of fees the Chief Inspector shall issue a Certificate of Inspection valid for one year.

History Note: *Authority G.S. 95-69.11; 95-69.14;*
Eff. July 1, 2006;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended December 1, 2021.

Appendix A20:

13 NCAC 13 .0423 is proposed for amendment as follows:

13 NCAC 13 .0423 MODEL HOBBY BOILERS

~~In addition to the requirements outlined in this Chapter for manually fired boilers, model~~ Model hobby boilers shall meet the following requirements:

(1) Each boiler shall have as a minimum:

(a) A properly operating pressure gauge that shall not be less than 1 ½ times nor more than four times the operating pressure of the boiler;

(b) Two safety relief valves each of which shall be capable of protecting the boiler from over pressurization. Requirements for ASME/NB certification are ~~waived;~~ waived. If an ASME/NB safety relief valve is utilized, only one safety relief valve is required;

(c) An easily accessible mud-ring valve;

(d) A water gauge glass; and

(e) If constructed of copper, a fusible plug in the top of the crown sheet.

(2) Upon successful completion of the inspection and payment of the fees, the Chief Inspector shall issue a Certificate of Inspection valid for one year.

History Note: *Authority G.S. 95-69.11; 95-69.14;*
Eff. July 1, 2006;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended December 1, 2021.

Appendix A21:

13 NCAC 13 .0701 is proposed for amendment as follows:

SECTION .0700 - NUCLEAR POWER SYSTEMS

13 NCAC 13 .0701 STANDARDS

(a) Nuclear power components and systems covered under the scope of Section III of the ASME Code shall be designed, constructed, reworked, stamped, and installed in accordance with Section III of the ASME Code. Balance of plant items may be constructed under other ASME Code sections as appropriate.

(b) All nuclear power systems falling under the scope of the ASME Code, Section III, are inspected in service under the requirements of Section XI of the ASME Code. The equipment is not required to be inspected under this Chapter. Balance of plant pressure equipment not covered by Section XI are required to be registered with a North Carolina identification number and inspected in accordance with this Chapter.

(c) A vessel composed of two or more pressure retaining compartments shall constitute one complete unit for the purpose of assigning the North Carolina identification number.

(d) The design criteria for nuclear power systems shall be certified as to compliance with Section III of the ASME ~~Code by a registered professional engineer with at least one year of experience in nuclear pressure vessel design.~~ Code.

History Note: *Authority G.S. 95-69.9; 95-69.11; 95-69.14;*
Eff. May 29, 1981;
Amended Eff. October 1, 2008; July 1, 2006; June 1, 1982;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 22, ~~2018.~~ 2018;
Amended December 1, 2021.

Appendix B:
STATUTORY AUTHORITY FOR BOILER AND PRESSURE VESSEL INSPECTIONS

Chapter 95, Article 7A – Uniform Boiler and Pressure Vessel Act: Article_7A.pdf (ncleg.net)

Boilers are defined as any "closed vessel in which water is heated, steam is generated, steam is superheated, or any combination thereof, under pressure or vacuum by the direct or indirect application of heat. The term 'boiler' shall also include fired units for heating or vaporizing liquids other than water where these units are complete within themselves." *See NCGS § 95-69.9(b).* This includes all vessels except those specifically excepted under NCGS § 95-69.10, for example vessels owned or operated by the federal government, unless NCDOL has been asked for coverage by this Article; vessels covered under the US Department of Transportation; vessels used for agricultural purposes; and vessels in private residences.

The Boiler and Pressure Vessel Bureau is charged with inspecting all applicable boilers and pressure vessels; issuing inspection certificates for devices in found in compliance; enjoining violations of the Act; requiring periodic reports of device owners; investigating serious accidents; establishing reasonable fees for inspections; establishing reasonable fees for examination and certification of inspectors; and issuing, suspending, or revoking an inspector's commission. *See NCGS § 95-69.11*.

The Uniform Boiler and Pressure Vessel Act ("Act") further governs the construction, operation, and use of boilers and pressure vessels, including, where necessary, requirements for fencing to prevent unauthorized persons from coming in contact with boilers and pressure vessels; maintaining adequate records of the type, dimensions, age, conditions, pressure allowed upon, location, and date of the last inspection of all boilers and pressure vessels; performing inspections and audits relating to the construction and repair of boilers and pressure vessels; and requiring that before any boiler or pressure vessel is transferred into the State, or is moved from one location to another within the State, the owner or the owner's authorized agent shall file a written notice of intent

to do so and the type of device involved; and devising and proctoring examinations to applicants seeking a commission as inspectors of boilers and pressure vessels in this State. *See NCGS § 95-69.11*.

Pursuant to NCGS § 95-69.10, the Act applies to all boilers and pressure vessels constructed, used, or designed for operation in North Carolina including all new and existing installation unless specifically excluded by NCGS § 95-69.10(b)(1) – (20). Additional specifications and exemptions are found in NCGS § 95-69.10(c)-(g).

- Construction and inspection requirements do not apply to hot water supply boilers or hot water heaters directly fired by oil, gas, or electricity or to hot water storage tanks heated by steam;
- Construction requirements do not apply to pressure vessels installed prior to December 31, 1981 if they are equipped with ASME Code and National Board-Certified safety relief valves with additional requirements;
- Construction requirements shall not apply to hydropneumatic tanks installed or operated by a community water system prior to January 1, 1986;
- Inspection requirements shall not apply to pressure vessels used for transportation or storage of liquefied petroleum gas that are subject to inspection in accordance with the requirements established by the Department of Agriculture and Consumer Services.

The administrative rules that govern the inspection of boiler and pressure vessels are often very technical and detailed and require periodic adjustments as industry terminology and industry standards evolve with technology. While NCDOL has not updated rules every year, there have been a number of rules amended to reflect current industry terminology and technical standards. Table I provides a summary of the rule changes for these purposes over the past 12 years.

TABLE I

Rule	**Late Rule Change**	**Reason for Update**
13 NCAC 13 .0101 Definitions	March 1, 2017	Technical/Terminology
13 NCAC 13 .0203 North Carolina Commission (inspector)	March 1, 2017	Technical/Terminology
13 NCAC 13 .0205 Owner-User Inspection Organization	March 1, 2017	Technical/Terminology
13 NCAC 13 .0101 Definitions	March 1, 2015	Technical/Terminology
13 NCAC 13 .0203 North Carolina Commission (inspector)	March 1, 2015	Technical/Terminology

13 NCAC 13 .0210 Certificate and Inspection Fees	March 1, 2015	Technical/Terminology
13 NCAC 13 .0101 Definitions	July 1, 2011	Technical/Terminology
13 NCAC 13 .0103 Inspections Revealing Deficiencies	July 1, 2011	Technical/Terminology
13 NCAC 13 .0202 Inspector Qualification	July 1, 2011	Technical/Terminology
13 NCAC 13 .0101 Definitions	January 1, 2009	Technical/Terminology
13 NCAC 13 .0202 Inspector Qualification	January 1, 2009	Technical/Terminology
13 NCAC 13 .0203 North Carolina Commission (inspector)	January 1, 2009	Technical/Terminology
13 NCAC 13 .0204 Conflict of Interest	January 1, 2009	Technical/Terminology
13 NCAC 13 .0205 Owner-User Inspection Organization	January 1, 2009	Technical/Terminology
13 NCAC 13 .0206 Owners or Users to Notify CI of Accidents	January 1, 2009	Technical/Terminology
13 NCAC 13 .0208 Insurance Co. to Notify Chief Inspector	January 1, 2009	Technical/Terminology
13 NCAC 13 .0210 Shop Inspections and R Stamp Qualification	January 1, 2009	Technical/Terminology
13 NCAC 13 .0301 Inspection Documentation	January 1, 2009	Technical/Terminology
13 NCAC 13 .0302 Certificate Issuance	January 1, 2009	Technical/Terminology
13 NCAC 13 .0401 Design and Construction Standards	January 1, 2009	Technical/Terminology
13 NCAC 13 .0403 Maximum Allowable Working Pressure	January 1, 2009	Technical/Terminology
13 NCAC 13 .0404 Controls and Safety Devices	January 1, 2009	Technical/Terminology
13 NCAC 13 .0405 Pressure Relief Devices	January 1, 2009	Technical/Terminology
13 NCAC 13 .0409 Automatic Low Water Cutoff Controls and	January 1, 2009	Technical/Terminology
13 NCAC 13 .0412 Expansion Tanks	January 1, 2009	Technical/Terminology
13 NCAC 13 .0413 Clearances	January 1, 2009	Technical/Terminology
13 NCAC 13 .0414 Gas-Fired Jacketed Steam Kettle	January 1, 2009	Technical/Terminology
13 NCAC 13 .0416 Reinstallation of Boilers and Pressure Vessels	January 1, 2009	Technical/Terminology
13 NCAC 13 .0417 Supports	January 1, 2009	Technical/Terminology
13 NCAC 13 .0420 Firing Mechanism Controls	January 1, 2009	Technical/Terminology
13 NCAC 13 .0701 North Carolina Commission (inspector)	January 1, 2009	Technical/Terminology

The most recent rule-based fee increase is listed below in Table II.

TABLE II

Rule	**Late Rule Change**	**Reason for Update**
13 NCAC 13 .0205 Owner-User Inspection Organization	March 1, 2015	$20 to $25 per inspection
13 NCAC 13 .0213 Certificate and Inspection Fees	March 1, 2015	Fee Change Please See Summary*
13 NCAC 13 .0303 Inspections Revealing Deficiencies	March 1, 2015	$35 to $40 for each reinspection
13 NCAC 13 .0213 Certificate and Inspection Fees	March 1, 2006	Fee Change Please See Summary**

*Specific Fee Increases for **March 1, 2015** under 13 NCAC 13 .0213

	External Inspection	Internal Inspection
Boilers < 500 Sq. Ft	$45 increased to $50	$80 Increased to $85
Boilers 500 sq ft – 5000 sq. ft	$110 increased to $120	$225 Increased to $235
Boilers > 5000 Sq. Ft	$300 increased to $330	$500 Increased to $600
Cast Iron Boilers	$45 increased to $45	$75 Increased to $80
Locomotive Boilers	N/A	$75 Increased to $150
Exhibition Boilers	N/A	$45 Increased to $50
Hobby Boilers	N/A	$30 Increased to $35
Pressure Vessels < 20 sq. ft.	$35 increased to $40	$40 Increased to $45
Pressure Vessels 20-50 sq. ft.	$45 increased to $50	$55 Increased to $60
Pressure Vessels 50-70 sq. ft.	$75 increased to $85	$125 Increased to $135
Pressure Vessels > 70 sq. ft.	$125 increased to $135	$180 Increased to $190
Heat Exchangers 500-1000 sq. ft	$55 increased to $60	
Heat Exchangers 1000-2000 sq. ft	$85 increased to $90	
Heat Exchangers 2000-3000 sq. ft	$125 increased to $130	
Heat Exchangers > 3000 sq. ft	$175 increased to $180	

Shop inspection fees increased from $300 to $350 per half day and $500 to $560 for a full day
Nuclear inspection fees increased from $350 to $400 per half day and $560 to $610 for a full day
Audit fees increased from $400 to $450 per half day and $640 to $690 for a full day

Specific Fee Increases for **March 1, 2006 under 13 NCAC 13 .0213

	External Inspection	Internal Inspection
Boilers < 500 Sq. Ft	$40 increased to $45	$70 Increased to $80
Boilers 500 sq ft – 5000 sq. ft	$100 increased to $110	$200 Increased to $225
Boilers > 5000 Sq. Ft	$250 increased to $300	$400 Increased to $500
Pressure Vessels < 20 sq. ft.	$30 increased to $35	$35 Increased to $40
Pressure Vessels 20-50 sq. ft.	$40 increased to $45	$50 Increased to $55
Pressure Vessels 50-70 sq. ft.	$70 increased to $75	$100 Increased to $125
Pressure Vessels > 70 sq. ft.	$100 increased to $125	$150 Increased to $180
Heat Exchangers < 500 sq. ft	$40 increased to $45	
Heat Exchangers 500-1000 sq. ft	$50 increased to $55	
Heat Exchangers 1000-2000 sq. ft	$75 increased to $85	
Heat Exchangers 2000-3000 sq. ft	$100 increased to $125	
Heat Exchangers > 3000 sq. ft	$125 increased to $175	

Shop inspection fees increased from $250 to $300 per half day and $420 to $500 for a full day
Nuclear inspection fees increased from $300 to $350 per half day and $480 to $560 for a full day
Audit fees increased from $350 to $400 per half day and $550 to $640 for a full day

END

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Jill F. Cramer/General Counsel/NCDOL