**ENVIRONMENTAL MANAGEMENT COMMISSION**
**FISCAL AND REGULATORY ANALYSIS FOR AMENDMENTS CONCERNING START-UP, SHUT-DOWN AND MALFUNCTION (SSM) OPERATIONS**

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| **Rule Adoption:** | 15A NCAC 02D .0535 and .0545 |
| **Rule Topic:** | Startup, shutdown and malfunction (SSM) operations |
| **NCDEQ Division:** | Department of Environmental Quality, Division of Air Quality |
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| **Impact Summary:** | State government: Yes<br>Local government: Yes<br>Substantial impact: No |
| **Statutory Authority:** | G.S. 143-215.3(a)(1); 143-215.107(a)(1), (3), (4), (5); 143-215.108; 143B-282;. |
| **Necessity:** | To amend requirements for start-up, shut-down and malfunction. |

## I. Executive Summary

On May 22, 2015, the U.S. Environmental Protection Agency (EPA) issued a final action to ensure states have plans in place that are fully consistent with the Clean Air Act and recent court decisions concerning startup, shutdown and malfunction (SSM) operations. EPA's final action responds to the Sierra Club Petition, clarifies the EPA's SSM Policy to assure consistency with the Clean Air Act and recent court decisions, and finalizes findings that the SSM provisions in the State Implementation Plans (SIPs) of 36 states that do not meet the requirements of the Clean Air Act (CAA) and accordingly issues a "SIP call" for each of those states. The CAA (section 110(k)(5)) provides a mechanism commonly called a "SIP call" for correcting state implementation plans that the EPA Administrator finds to be substantially inadequate to meet CAA requirements. Exemptions from emission limits during periods of start-up, shut-down and malfunction exist in a North Carolina's state rules, which were adopted and approved into the SIP by the EPA many years ago.

In issuing the SIP call action, the EPA directs the affected states to correct specific SSM provisions in their SIPs. The Clean Air Act allows a maximum of 18 months from the issuance of the final action to submit a SIP revision. The SIP submission deadline for each of the 36 states subject to the SIP call action is November 22, 2016.

As described in the February 2013 EPA proposal, the Petitioner objected to two generally applicable provisions in the North Carolina SIP that provide exemptions for emissions exceeding otherwise applicable SIP emission limitations at the discretion of the state agency during malfunctions (15A NCAC 02D .0535(c)) and during startup and shutdown (15A NCAC 02D .0535(g)).

The EPA granted the Petition with respect to 15A NCAC 02D .0535(c) and 15A NCAC 02D .0535(g). In February 2013, the EPA proposed to find that 15A NCAC 02D .0535(c) and 15A NCAC 02D .0535(g) are substantially inadequate to meet CAA requirements, and thus proposed to issue a SIP call with respect to these provisions.

Since that time several states have entered into litigation over the validity of the SIP call. North Carolina is one of those states. Nonetheless, a requirement to submit a SIP revision by November 22, 2016 currently remains in effect. As a result, and after consideration of possible options to address the identified concerns, the following rule revisions are proposed:

- Amending 15A NCAC 02D .0535, Excess Emissions Reporting and Malfunctions, to include introductory language indicating that Rule 02D .0535 would be the rule in effect if the states' lawsuits are successful.

- Adopting a new rule 15A NCAC 02D .0545, Treatment of Malfunction Events and Work Practices for Startup and Shutdown Operations, which would be in effect in the event that states' lawsuits are unsuccessful, as indicated in its introductory language of the rule. Rule 02D .0545 eliminates the exemptions in paragraphs (c) and (g). For startup and shutdown, Rule 02D .0545 allows a facility to demonstrate compliance with the applicable existing emission limits, generally available work practice standards, work practice standards in analogous federal rules that a specific source may not otherwise be subject to, or a source specific startup and shutdown work practice standard permit limit. For malfunctions a facility may demonstrate compliance with the applicable existing limits or with a source specific malfunction work practice standard permit limit.

Table 1, Impact Summary of the SIP Call for Start-up, Shut-down, and Malfunction in North Carolina, shows details of the impacts of the proposed amendments to the NC rules. The estimated annual costs and benefits of these proposed rules do not exceed the threshold of substantial economic impact, as defined in North Carolina's Administrative Procedures Act, NC General Statute 150B-21.4 (i.e., an aggregate financial impact on all persons affected of at least one million dollars in a 12-month period).

**Table 1. Annual Impact Summary of the SIP Call for Start-up, Shut-down, and Malfunction in North Carolina**

| Facility Type | Number of Impacted Facilities | State Permit Modification Fee Revenue | State Opportunity Cost of Staff Time** | Affected Sources Costs (Private and Government Owned) | Total Impact |
|---|---|---|---|---|---|
| Title V | 14.5 | $10,200 | $10,200 | $82,700 | $103,100 |
| Synthetic Minor | 20.3 | $8,200 | $8,200 | $109,900 | $127,100 |
| Small Facility | 50.0 | $2,500 | $2,500 | $102,700 | $107,500 |
| **Annual Impact 2017 thru 2021** | **85** | **$20,900** | **$20,900** | **$295,300** | **$337,700** |
| **Annual Impact 2022 thru 2024*** | **70** | **$10,700** | **$10,700** | **$212,600** | **$234,600** |

* Annual impact after 2021 excludes the Title V Facilities since they have a shorter permit validity term than the synthetic minors and small facilities.

** Represents the opportunity cost to state government that offsets an equal amount of permitting activity that could have been used for another purpose. This analysis assumes that the permit fee would completely offset the cost of staff time.

Table 2, Net Present Value of the Fiscal Impact of the Proposed Rules of the SIP Call for Start-up, Shut-down, and Malfunction in North Carolina, shows an estimate of the rule impacts during an eight-year period of analysis. The net present value calculations presented in the table employ a 7% discount rate, as required by statute.

**Table 2. Net Present Value of the Annual Fiscal Impact of the Proposed Rules of the SIP Call for Start-up, Shut-down, and Malfunction in North Carolina**

| Year | Local Program Permit Modification Fee Revenue | State Government Permit Modification Fee Revenue | State Government Staff Cost for Modification* | Costs to Affected Sources (Private Sector and Government Owned) | Total Impact |
|---|---|---|---|---|---|
| 2017 | $0 | $20,900 | $20,900 | $295,300 | $337,100 |
| 2018 | $0 | $20,900 | $20,900 | $295,300 | $337,100 |
| 2019 | $0 | $20,900 | $20,900 | $295,300 | $337,100 |
| 2020 | $0 | $20,900 | $20,900 | $295,300 | $337,100 |
| 2021 | $0 | $20,900 | $20,900 | $295,300 | $337,100 |
| 2022 | $0 | $10,700 | $10,700 | $212,600 | $234,000 |
| 2023 | $0 | $10,700 | $10,700 | $212,600 | $234,000 |
| 2024 | $0 | $10,700 | $10,700 | $212,600 | $234,000 |
| **NPV** | **$0** | **$105,700** | **$105,700** | **$1,608,600** | **$1,820,000** |

* This analysis assumes permit fees collected will completely offset the cost of staff time to process modifications.

## II. Background

### A. Overview of the EPA's Evaluation of Specific SIP Provisions

In reviewing the Petitioner's concerns with respect to the specific SIP provisions identified in the Petition, the EPA notes that most of the provisions relate to a small number of common issues. Many of these provisions are as old as the original SIPs that the EPA approved in the early 1970s, when the states and the EPA had limited experience in evaluating the provisions' adequacy, enforceability and consistency with CAA requirements.

On February 12, 2013, the EPA proposed to deny the request in the Petition that EPA prohibit affirmative defenses in SIPs, grant the Petitioner's claim for 36 of the 39 states identified in the Petition, by proposing to determine that these 36 states have approved SIPs that include one or more SSM provision that is inconsistent with the CAA. EPA proposed a "SIP Call" for each of those 36 states, and denied the request in the Petition that EPA discontinue reliance on interpretive letters from states to clarify any potential ambiguity in the state's SIP submission.

Subsequent to the February 2013 proposal, on April 18, 2014, the U.S. Court of Appeals for the D.C. Circuit issued its decision in NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014). The court evaluated the legal validity of an affirmative defense provision in the EPA's NESHAP for the manufacturers of Portland cement. In the court's opinion, affirmative defense provisions in the EPA's own regulations cannot be applicable to violations of CAA requirements. The EPA extended the logic of the court's decision to SIP provisions and revised its SSM policy on approvability of affirmative defense provisions in SIPs.

The EPA issued a supplemental proposal in September 2014 to reflect the court's opinion that affirmative defense provisions cannot be applicable to violations of CAA requirements. In the supplemental proposal, the EPA revised what it proposed in February 2013 with respect to affirmative defense provisions and it proposed SIP calls for affirmative defense provisions in additional states.

In some instances, the EPA does not agree with the Petitioner's reading of the provision in question, or with the Petitioner's conclusion that the provision is inconsistent with the Petitioner and other commenters.

EPA's document names the specific SIP provisions identified in the Petition or by the EPA, including a summary of what the EPA proposed and followed by the EPA's stated final action with respect to each SIP provision.

#### 1. Automatic Exemption Provisions

A significant number of provisions identified by the Petitioner pertain to existing SIP provisions that create automatic exemptions for excess emissions during periods of SSM. Some of these provisions also pertain to exemptions for excess emissions that occur during maintenance, load change or other types of normal source operation. These provisions typically provide that a source subject to a specific SIP emission limitation is exempted from compliance during SSM, so that the excess emissions are defined as not violations. Most of these provisions are artifacts of the early phases of the SIP program, approved before state and EPA regulators recognized the

implications of such exemptions. Whatever the genesis of these existing SIP provisions, however, these automatic exemptions from emission limitations are not consistent with the CAA, as the EPA has stated in its SSM Policy since at least 1982.

After evaluating the Petition, the EPA proposed to determine that a number of states have existing SIP provisions that create impermissible automatic exemptions for excess emissions during malfunctions or during startup, shutdown or other types of normal source operation. In those instances, where the EPA agreed that a SIP provision identified by the Petitioner contained such an exemption contrary to the requirements of the CAA, the EPA proposed to grant the Petition and accordingly to issue a SIP call to the appropriate state.

2. Director's Discretion Exemption Provisions

Another category of problematic SIP provision identified by the Petitioner is exemptions for excess emissions that, while not automatic, are exemptions for such emissions granted at the discretion of state regulatory personnel. In some cases, the SIP provision in question may provide some minimal degree of process and some parameters for the granting of such discretionary exemptions, but the typical provision at issue allows state personnel to decide unilaterally and without meaningful limitations than what would otherwise be a violation of the applicable emission limitation is instead exempt. Because the state personnel have the authority to decide that the excess emissions at issue are not a violation of the applicable emission limitation, such a decision would transform the violation into a non-violation, thereby barring enforcement by the EPA or others.

The EPA refers to this type of provision as a "director's discretion" provision, and the EPA interprets the CAA generally to forbid such provisions in SIPs because they have the potential to undermine fundamental statutory objectives such as the attainment and maintenance of the NAAQS and to undermine effective enforcement of the SIP. Unbounded director's discretion provisions purport to allow unilateral revisions of approved SIP provisions without meeting the applicable statutory substantive and procedural requirements for SIP revisions. The specific SIP provisions at issue in the Petition are especially inappropriate because they purport to allow discretionary creation of case-by-case exemptions from the applicable emission limitations, when the CAA does not permit any such exemptions in the first instance. The practical impact of such provisions is that in effect they transform an enforcement discretion decision by the state (*e.g.*, that the excess emission from a given SSM event should be excused for some reason) into an exemption from compliance that also prevents enforcement by the EPA or through a citizen suit. The EPA's longstanding SSM Policy has interpreted the CAA to preclude SIP provisions in which a state's exercise of its own enforcement discretion bars enforcement by the EPA or through a citizen suit. Where the EPA agreed that a SIP provision identified by the Petitioner contained such a discretionary exemption contrary to the requirements of the CAA, the EPA proposed to grant the Petition and to call for the state to rectify the problem.

3. State-Only Enforcement Discretion Provisions

The Petitioner identified existing SIP provisions in many states that ostensibly pertain to parameters for the exercise of enforcement discretion by state personnel for violations due to excess emissions during SSM events. The EPA's SSM Policy has consistently encouraged states

to utilize traditional enforcement discretion within appropriate bounds for such violations and, in the 1982 SSM Guidance, explicitly recommended criteria that states might consider in the event that they elected to formalize their enforcement discretion with provisions in the SIP. The intent has been that such enforcement discretion provisions in a SIP would be "state-only," meaning that the provisions apply only to the state's own enforcement personnel and not to the EPA or to others.

The EPA determined that a number of states have SIP provisions that, when evaluated carefully, could reasonably be construed to allow the state to make enforcement discretion decisions that would purport to foreclose enforcement by the EPA under CAA section 113 or by citizens under section 304. In those instances, where the EPA agreed that a specific provision could have the effect of impeding adequate enforcement of the requirements of the SIP by parties other than the state, the EPA proposed to grant the Petition and to take action to rectify the problem. By contrast, where the EPA's evaluation indicated that the existing provision on its face or as reasonably construed could not be read to preclude enforcement by parties other than the state, the EPA proposed to deny the Petition, and the EPA invited comment on this issue in particular to assure that the state and the EPA have a common understanding that the provision does not have any impact on potential enforcement by the EPA or through a citizen suit. This process was intended to ensure that there is no misunderstanding in the future that the correct reading of the SIP provision would not bar enforcement by the EPA or through a citizen suit when the state elected to exercise its own enforcement discretion.

In the February 2013 proposal, the EPA noted that another method by which to eliminate any potential ambiguity about the meaning of these enforcement discretion provisions would be for the state to revise its SIP to remove the provisions. Because these provisions are only applicable to the state, the EPA's view was, and still is, that the provisions need not be included within the SIP. Thus, the EPA supports states that elect to revise their SIPs to remove these provisions to avoid any unnecessary confusion.

4. Affirmative Defense Provisions

The Petitioner asked the EPA to rescind its SSM Policy element that interpreted the CAA to allow SIPs to include affirmative defenses for violations due to excess emissions during any type of SSM events. Related to this request, the Petitioner asked the EPA to find that states with SIPs containing an affirmative defense to monetary penalties for excess emissions during SSM events are substantially inadequate because they do not comply with the CAA. If the EPA were to deny the Petitioner's request that the EPA revise its interpretation of the CAA, the Petitioner asked that the EPA in the alternative require states with SIPs that contain such affirmative defense provisions to revise them so that they are consistent with the EPA's 1999 SSM Guidance for excess emissions during SSM events and to issue a SIP call to states with provisions inconsistent with the EPA's interpretation of the CAA.

The Petitioner drew no distinction between affirmative defense provisions for malfunctions versus affirmative defense provisions for startup and shutdown or other normal modes of operation. As explained in section IV.B of the February 2013 proposal, the EPA did make such distinction in its proposed response to the Petition, at that time proposing to revise its SSM Policy to reflect an interpretation of the CAA that affirmative defense provisions applicable

during startup and shutdown were not appropriate but reasoning that affirmative defense provisions remained appropriate for violations when due to malfunction events. Thus, in the February 2013 proposal, the EPA proposed to issue a SIP call to a state to rectify a problem with an affirmative defense provision only if the provision included an affirmative defense that was applicable to excess emissions during startup and shutdown or included an affirmative defense that was applicable to excess emissions during malfunctions but was inconsistent with the criteria recommended in the EPA's SSM Policy.

For some of the affirmative defense provisions identified by the Sierra Club Petitioner, the EPA in the SNPR re-proposed the granting of the Petition but proposed a revised basis for its proposed findings of inadequacy and SIP calls. For other affirmative defense provisions identified by the Petitioner, the EPA in the SNPR reversed its prior proposed denial of the Petition, and it newly proposed findings of inadequacy and SIP calls. Further, for some affirmative defense provisions that were not explicitly identified by the Petitioner, the EPA in the SNPR proposed findings of inadequacy and SIP calls for additional affirmative defense provisions that were not explicitly identified by the Petitioner.

5. Legal Considerations

The State of North Carolina was among 17 state attorney generals to challenge the EPA SSM SIP Call action. The legal argument is that EPA did not demonstrate that there is any failure to maintain the National Ambient Air Quality Standard (NAAQS). Currently, North Carolina is in compliance with all of the NAAQS. It is unlikely that case will be resolved before the Environmental Management Commission must begin the rule amendment process as required by Administrative Procedures Act.

**B. Implementation Aspects of EPA's SSM SIP Policy**

EPA’s Recommendations Concerning Alternative Emission Limitations for Startup and Shutdown:

In response to a SIP call concerning an existing automatic or discretionary exemption for excess emissions during SSM events, the EPA anticipates that a state may elect to create an alternative emission limitation that applies during startup and shutdown events (or during any other normal mode of operation during which the exemption may have applied) as a revised element or component of the existing emission limitation. The EPA emphasizes that states have discretion to revise the identified deficient provisions by any means they choose, so long as the revised provision is consistent with CAA requirements for SIP provisions. If a state elects to create an alternative emission limitation to replace an existing exemption, there are several issues that the state should consider.

First, the EPA has longstanding guidance that provides recommendations to states concerning the development of alternative emission limitations applicable during startup and shutdown to replace exemptions in existing SIP provisions. The EPA first provided this guidance in the 1999 SSM Guidance but has reiterated and clarified its guidance in this action. The EPA recommends that states consider the seven clarified criteria when developing new alternative emission limitations to replace automatic or discretionary exemptions, in order to assure that the revised

provisions submitted to the EPA for approval meet basic CAA requirements for SIP emission limitations.

Second, the EPA reiterates that SIP emission limitations that are expressed as numerical limitations do not necessarily have to require the same numerical level of emissions during all modes of normal source operation. Under appropriate circumstances consistent with the criteria that the EPA recommends for alternative emission limitations, it may be appropriate to have a numerical emission limitation that has a higher numerical level applicable during specific modes of source operation, such as during startup and shutdown. For example, if a rate-based $NO_X$ emission limitation in the SIP applies to a specific source category, then it may be appropriate for that emission limitation to have a higher numerical standard applicable during defined periods of startup or shutdown. Such an approach can be consistent with SIP requirements, so long as that higher numerical level for startup or shutdown is properly established and is legally and practically enforceable, and so long as other overarching CAA requirements are also met. However, alternative emission limitations applicable during startup and shutdown cannot be inappropriately high or an effectively unlimited or uncontrolled level of emissions, as those would constitute impermissible *de facto* exemptions for emissions during certain modes of operation.

Third, the EPA reiterates that SIP emission limitations do not necessarily have to be expressed in terms of a numerical level of emissions. There are many sources for which a numerically expressed emission limitation will be the most appropriate and will result in the most legally and practically enforceable SIP requirements. However, the EPA recognizes that for some source categories, under some circumstances, it may be appropriate for the SIP emission limitation to include a specific technological control requirement or specific work practice requirement that applies during specified modes of source operation such as startup and shutdown.

Fourth, the EPA notes that revisions to replace existing automatic or discretionary exemptions for SSM events with alternative emission limitations applicable during start-up and shut-down also need to meet the applicable overarching CAA requirements with respect to the SIP emission limitation at issue. For example, if the emission limitation is in the SIP to meet the requirement that the source category be subject to RACT (reasonably available control technology) level controls for $NO_X$ for purposes of the ozone NAAQS (National Ambient Air Quality Standard), then the state should assure that the higher numerical level or other control measure that will apply to $NO_X$ emissions during startup and shutdown does constitute a RACT level of control for such sources for such pollutant during such modes of operation.

Finally, the EPA notes that states should not replace automatic or discretionary exemptions for excess emissions during SSM events with alternative emission limitations that are a generic requirement such as a "general duty to minimize emissions" provision or an "exercise good engineering judgment" provision. While such provisions may serve an overarching purpose of encouraging sources to design, maintain and operate their sources correctly, such generic clauses are not a valid substitute for more specific emission limitations that apply during normal modes of operation such as startup and shutdown.

## III. Existing Rules

Existing SSM requirements are found in 15A NCAC 02D.0535 and the history note reveals that this rule was originally adopted and became effective on March 1, 1983. There have been a number of amendments to this rule as follows: June 1, 2008; April 1, 2001; July 1, 1998; July 1, 1996; October 1, 1991; May 1, 1990; April 1, 1986; July 1, 1984.

Recent court challenges to the existing rule 15A NCAC 02D.0535 have identified several difficulties with the current version of the rule.

In their supplemental proposal, EPA extends the logic of the D.C. Circuit court's decision in NRDC v. EPA to SIP provisions. Under terms of a settlement agreement with the Sierra Club and WildEarth Guardians, the signature deadline for this supplemental notice is September 5, 2014, and the signature date for the final notice is May 22, 2015.

That lawsuit identified the following problems with these existing rule in North Carolina and Local Jurisdictions in EPA Region IV:

A. North Carolina SIP

In EPA's February 2013 proposal, the Petitioner objected to two generally applicable provisions in the North Carolina SIP that provide exemptions for emissions exceeding otherwise applicable SIP emission limitations at the discretion of the state agency during malfunctions (15A NCAC 02D .0535(c)) and during startup and shutdown (15A NCAC 02D .0535(g)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 15A NCAC 02D .0535(c) and 15A NCAC 02D .0535(g). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing in its final rule a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket[1] for this rulemaking concerning any comments specific to the North Carolina SIP that the EPA received and considered during the development of this rulemaking.

B. North Carolina: Forsyth County

In this final action, the EPA is granting the Petition with respect to Forsyth County Code, ch. 3, 3D.0535(c) and Forsyth County Code, ch. 3, 3D.0535(g). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available

[1] EPA's electronic public docket and comment system. The docket number for this action is Docket ID No. EPA-HQ-OAR- 2012-0322. https://www3.epa.gov/airquality/urbanair/sipstatus/docs/20150522fr.pdf

in the docket[2] for this rulemaking concerning any comments specific to the North Carolina SIP that the EPA received and considered during the development of this rulemaking.

## IV. Proposed Rules

15A NCAC 02D .0535, Excess Emissions Reporting and Malfunctions, is proposed to be amended to include introductory language that indicates that Rule 02D .0535 is the rule that will be in effect if the states' lawsuits are successful.

A new rule 15A NCAC 02D .0545, Treatment of Malfunction Events and Work Practices for Startup and Shutdown Operations, is proposed for adoption and would be in effect in the event that states' lawsuits are unsuccessful as indicated in its introductory language. Rule 02D .0545 eliminates the exemptions in paragraphs (c) and (g). For startup and shutdown, Rule 02D .0545 allows a facility to demonstrate compliance with the applicable existing emission limits, generally available work practice standards, work practice standards in analogous federal rules that a specific source may not otherwise be subject to, or a source specific startup and shutdown work practice standard permit limit. For malfunctions a facility may demonstrate compliance with the applicable existing limits or with a source specific malfunction work practice standard permit limit.

## V. Changes from the Regulatory Baseline

The EPA's proposed SSM SIP Call approach is facing legal challenges brought by 17 states including North Carolina. However, that challenge is not likely to be resolved before it is necessary to proceed with rulemaking to meet the November 22, 2016 deadline. Therefore, for the purposes of this fiscal and regulatory analysis, DAQ measured changes from the baseline condition using the existing 15A NCAC 02D .0535 rule compared to amended 15A NCAC 02D .0535 along with a new rule 15A NCAC 02D .0545 rule. Taking this approach accounts for the impacts of the proposed rules developed to address that contingency.

At this time, the EPA SIP Call remains in effect and North Carolina has an obligation to respond. In the event that the EPA SIP Call is upheld at the conclusion of litigation, proceeding with the proposed rulemaking at this time positions the agency to most expeditiously offer its remedy to the deficiency and avoid a potential subsequent finding of failure to submit. An alternative approach to the EPA SIP Call could be to wait for the outcome of the SSM lawsuit; however, delaying rulemaking is not a responsive option. Failure to submit a plan responsive to the SIP Call by the November deadline would expose the state to a finding of failure to submit and could lead to imposition of sanctions and possible imposition of a federal plan. Such sanctions, including additional emissions offsets by stationary sources and potential withholding of funding, would only apply in nonattainment areas. North Carolina currently does not have any nonattainment areas. As a result, it is not possible to estimate fiscal impacts of such a scenario. In addition, EPA has not proposed a federal plan as of yet, therefore any potential impacts from unknown elements of such a plan cannot be qualitatively described or quantified at this time.

[2] Id. Page 468

Regulators and the regulated community are both concerned about any outcome that could result in the imposition of sanctions or a federal plan. Benefits to sources of the DAQ approach include dealing with one implementing agency instead of two implementing agencies (federal and state), more certainty regarding compliance status during periods of start-up, shut-down and malfunction, and the rule makes it clear that standards of performance apply at all times.

The current SSM rule defines the regulatory baseline and that is compared to the proposed rules to estimate the economic impact. There would be no impact if the lawsuit is successful, otherwise the economic analysis identifies impacts that are not substantial.

## State and Local Government Impacts

The State of North Carolina, Division of Air Quality would experience an increase in permit modification revenue to clarify requirements for unusual sources due to these proposed rule changes. All sources must comply with SSM requirements at all times regardless of permit modifications, so the proposal would clarify this aspect for those unusual sources. DEQ's Compliance Section estimates, based on best professional judgement, that 25% of renewals would actually result in a modification as a result of the proposed changes in the event that the State's lawsuit is unsuccessful. This would lead to an estimated increase that 85 permit modifications may occur in any year.

Any of the three local air quality programs may experience increased revenues and workload after proposing similar changes to those local air program rules. Those affects are beyond the scope of this fiscal and regulatory impact. Similarly, any fiscal impacts are indirect for the three units of local government (Mecklenburg County Air Quality, Western NC Regional Air Quality Agency, and Forsyth County Office of Environmental Assistance and Protection) that operate air quality programs in North Carolina. These units of local government adopt administrative rules that closely mirror state rules, but their actions do not require estimated impacts for this analysis.

DAQ's review of the evaluations of SSM would occur on a case-by-case basis and the DAQ permitting staff time would be offset by the increased permit modification revenue. With respect to the Forsyth County's local air quality program, there have not been any incidents where director discretion applied thus, that specific local air quality agency does not expect any impacts, or on any local government unit as a result of the proposed rules. Beyond the small permit modifications, the DAQ does not expect additional impacts from the proposed rules.

## Private Sector Impacts

During start-up and shut-down work practice standards would become the emission standard that a facility would be required to comply with to address potential and averted violations. Malfunctions would not receive relief by using director's discretion; however, existing general-duty clauses or site-specific work practice standards could minimize potential violations.

This fiscal and regulatory impact analysis estimates costs to 85 affected facilities annually. DAQ's Compliance Section derived this estimated by assuming, based of best profession knowledge, that annually only 25% of the facilities scheduled for renewal request case-by-case permit modification to address sources not automatically exempt from start-up, shut-down and

malfunction provisions. Based on historical data and the number of facilities staying roughly constant as some facilities close and others come online, the analysis assumes no growth in the number of facilities affected.

Any facility required to submit case-by-case permit modifications for SSM procedures may incur consultant costs of $5,000 for Title V or synthetic minor facilities, or $2,000 for Small facilities. In addition, permit modification charges must be paid to the DAQ that are $700 for Title V, $400 for synthetic minor, or $50 for small facilities.

Table 3 shows assumed unit level costs to the private sector (which includes any owned by state, local or federal government by facility type due to Start-up, Shut-down, and Malfunction Requirements under amended 15A NCAC 02D .0535 along with a new rule 15A NCAC 02D .0545. However, any cost estimate should recognize the possibility that the legal challenge survives in the court. Under such circumstances, the existing 15A NCAC 02D .0535 essentially remains in effect and there will be no change from the baseline in this analysis.

**Table 3. Private Sector, including Government Owned, Facility Cost Estimates for Start-up, Shut-down, and Malfunction Requirements under amended 15A NCAC 02D .0535 along with a new rule 15A NCAC 02D .0545**

| Facility Type | Facility Total | Permit Tear (Years) | Consultant Costs | Permit Modification | Facility Costs |
|---|---|---|---|---|---|
| Title V | 290 | 5 | $5,000 | $700 | $5,700 |
| Synthetic Minor | 650 | 8 | $5,000 | $400 | $5,400 |
| Small Facility | 1600 | 8 | $2,000 | $50 | $2,050 |
| Total | 2540 | | | | |

These proposed rules can affect any source owned by the State of North Carolina, any unit of local government, federal government with cost impacts that may occur which could be similar to the private sector impacts identified in this analysis. Table 4, Government Owned Facility Impacts, shows projected impacts on state, local and federally owned government facilities. These are a very small fraction of all permitted facilities, and only 25% may submit permit modifications. This analysis assumes that government owned facilities may require such permit modifications.

It shows assumed costs to any state, local or federal government owned facility due to Start-up, Shut-down, and Malfunction Requirements under amended 15A NCAC 02D .0535 along with a new rule 15A NCAC 02D .0545.

## Table 4. Government Owned Facility Impacts

### A. State Owned Facilities

| **State Owned Facility Type** | Permit Term (Years) | Possible Number/ Year | Expected % Facilities | Expected Impacted Facilities | State Permit Modification Cost | Affected State Gov't Owned Facilities | Total State Facilities Cost |
|---|---|---|---|---|---|---|---|
| Title V | 5 | 0.4 | 25% | 0.1 | $100 | $500 | $600 |
| Synthetic Minor | 8 | 1.8 | 25% | 0.4 | $200 | $2,300 | $2,500 |
| Small Facility | 8 | 1.3 | 25% | 0.3 | $0 | $700 | $700 |
| Annual Impact 2017-2021 | | 3.5 | | 0.8 | $300 | $3,500 | $3,800 |
| Annual Impact 2022-2024* | | 3.1 | | 0.7 | $200 | $3,000 | $3,200 |

***** Annual impact after 2021 excludes the Title V Facilities since they have a shorter permit validity term than the synthetic minors and small facilities.

### B. Local Government Owned Facilities

| Local Gov't Owned Facility Type | Permit Term (Years) | Possible Number/ Year | Expected % Facilities | Expected Impacted Facilities | State Permit Modification Cost | Affected Local Gov't Owned Facilities | Total Local Facilities Cost |
|---|---|---|---|---|---|---|---|
| Title V | 5 | 4.0 | 25% | 1.0 | $700 | $5,000 | $5,700 |
| Synthetic Minor | 8 | 1.0 | 25% | 0.3 | $100 | $1,300 | $1,400 |
| Small Facility | 8 | 6.4 | 25% | 1.6 | $100 | $3,200 | $3,300 |
| Annual Impact 2017-2021 | | 11.4 | | 2.9 | $900 | $9,500 | $10,400 |
| Annual Impact 2022-2024* | | 7.4 | | 1.9 | $200 | $4,500 | $4,700 |

***** Annual impact after 2021 excludes the Title V Facilities since they have a shorter permit validity term than the synthetic minors and small facilities.

### C. Federal Owned Facilities

| Federal Gov't Owned Facility Type | Permit Term (Years) | Possible Number/ Year | Expected % Facilities | Expected Impacted Facilities | State Permit Modification Cost | Affected Federally Owned Facilities | Total Federal Facilities Cost |
|---|---|---|---|---|---|---|---|
| Title V | 5 | 0.8 | 25% | 0.2 | $100 | $1,000 | $1,100 |
| Synthetic Minor | 8 | 0.5 | 25% | 0.1 | $100 | $600 | $700 |
| Small Facility | 8 | 0.5 | 25% | 0.1 | $0 | $300 | $300 |
| Annual Impact 2017-2021 | | 1.8 | | 0.4 | $200 | $1,900 | $2,100 |
| Annual Impact 2022-2024* | | 1.0 | | 0.2 | $100 | $900 | $1,000 |

***** Annual impact after 2021 excludes the Title V Facilities since they have a shorter permit validity term than the synthetic minors and small facilities.

Table 5, State Government Impacts, shows the increased revenue to DAQ due to case-by-case permit modifications assuming that only 25% of the permitted facilities scheduled for renewal change their start-up, shut-down, and malfunction permit conditions. The level of effort spent on permit modifications is offset by an equal amount of opportunity cost on another permitting purpose. The net impact each year is equal to zero. Note that a different rule change, that OSBM approved on August 18, 2015, referred to as "Streamlining of Permit Exemptions Rule", is pending legislative review, which reduces the estimated number of affected small facilities by 75%, and would reduce state government revenue by $1,875 annually.

**Table 5. State Government Impacts**

| Year | Title V | Synthetic Minor | Small Facility | State Government Permit Modification Fee Revenue | Opportunity Cost | Net Impact |
|---|---|---|---|---|---|---|
| 2017 | $10,200 | $8,200 | $2,500 | $20,900 | ($20,900) | $0 |
| 2018 | $10,200 | $8,200 | $2,500 | $20,900 | ($20,900) | $0 |
| 2019 | $10,200 | $8,200 | $2,500 | $20,900 | ($20,900) | $0 |
| 2020 | $10,200 | $8,200 | $2,500 | $20,900 | ($20,900) | $0 |
| 2021 | $10,200 | $8,200 | $2,500 | $20,900 | ($20,900) | $0 |
| 2022 | $0 | $8,200 | $2,500 | $10,700 | ($10,700) | $0 |
| 2023 | $0 | $8,200 | $2,500 | $10,700 | ($10,700) | $0 |
| 2024 | $0 | $8,200 | $2,500 | $10,700 | ($10,700) | $0 |
| NPV | $41,800 | $49,000 | $14,900 | $105,700 | ($105,700) | $0 |

Table 6, Total Annual Cost of the Proposed Rules, presents impacts on the affected sources due to the proposed rules. Using the methodology developed, DAQ estimated impacts are less than one million dollars in any 12-month period. For the purposes of this analysis, DAQ assumed that facilities are already using the work practice standards. To the extent that the regulated community may have additional costs than those reported, any estimated annual costs are well below the substantial rule-making threshold.

As mentioned, another fiscal analysis of a rule change that OSBM approved on August 18, 2015, referred to as "Streamlining of Permit Exemptions Rule" is pending legislative review. Those proposed amendments would further reduce the estimated number of affected small facilities by 75%, from 1600 to 400, and reduce annual cost by $76,875 on the private sector.

**Table 6. Total Annual Cost for Private Sector, including Government Owned, of the Proposed Rules of the SIP Call for Start-up, Shut-down, and Malfunction**

## A. Private Sector and Government Owned Facilities

| **Facilities** | Possible Number/ Year | Expected % Facilities | Expected Impacted Facilities | Permit Modification Fee Costs | Compliance Costs | Total Cost |
|---|---|---|---|---|---|---|
| Title V | 58 | 25% | 14.5 | $10,200 | 72,500 | $82,700 |
| Synthetic Minor | 81 | 25% | 20.5 | $8,200 | 101,700 | $109,900 |
| Small Facility | 200 | 25% | 50.0 | $2,500 | 100,200 | $102,700 |
| Annual Impact 2017-2021 | 339 | | 85 | $20,900 | $274,400 | $295,300 |
| Annual Impact 2022-2024* | 281 | | 70 | $10,700 | $201,900 | $212,600 |

***** Annual impact after 2021 excludes the Title V Facilities since they have a shorter permit validity term than the synthetic minors and small facilities.

## B. Private Sector Facilities

| **Private Sector Facilities** | Possible Number/ Year | Expected % Facilities | Expected Impacted Facilities | Permit Modification Fees | Affected Private Facility Costs | Total Private Cost |
|---|---|---|---|---|---|---|
| Title V | 53 | 25% | 13.2 | $9,300 | $66,000 | $75,300 |
| Synthetic Minor | 78 | 25% | 19.5 | $7,800 | $97,500 | $105,300 |
| Small Facility | 192 | 25% | 48.0 | $2,400 | $96,000 | $98,400 |
| Annual Impact 2017-2021 | 323 | | 80.7 | $19,500 | $259,500 | $279,000 |
| Annual Impact 2022-2024 | 270 | | 67.5 | $10,200 | $193,500 | $203,700 |

***** Annual impact after 2021 excludes the Title V Facilities since they have a shorter permit validity term than the synthetic minors and small facilities.

## C. Government Owned Facility

| **Government Owned Facility** | Possible Number/ Year | Expected % Facilities | Expected Impacted Facilities | Permit Modification Fees | Affected Gov't Owned Facility Costs | Total Gov't Facilities Cost |
|---|---|---|---|---|---|---|
| Title V | 5.2 | 25% | 1.3 | $900 | $6,500 | $7,400 |
| Synthetic Minor | 3.3 | 25% | 0.8 | $400 | $4,200 | $4,600 |
| Small Facility | 8.2 | 25% | 2.0 | $100 | $4,200 | $4,300 |
| Annual Impact 2017-2021 | 16.7 | | 4.2 | $1,400 | $14,900 | $16,300 |
| Annual Impact 2022-2024* | 11.5 | | 2.9 | $500 | $8,400 | $8,900 |

***** Annual impact after 2021 excludes the Title V Facilities since they have a shorter permit validity term than the synthetic minors and small facilities.

Table 7, Annual Fiscal Impacts of the SIP Call for Start-up, Shut-down, and Malfunction in North Carolina, presents a summary of the fiscal impacts of the proposed rules. The total private sector costs are minimal and ignores any benefits that may arise due to improvement due to any work practice standards.

**Table 7. Annual Fiscal Impacts the SIP Call for Start-up, Shut-down, and Malfunction in North Carolina**

| Facility Type | State Permit Modification Fee Revenue | State Opportunity Cost of Staff Time** | Affected Sources Costs (Private and Government Owned) | Total Impact |
|---|---|---|---|---|
| Title V | $10,200 | $10,200 | $10,200 | $82,700 |
| Synthetic Minor | $8,200 | $8,200 | $8,200 | $109,900 |
| Small Facility | $2,500 | $2,500 | $2,500 | $102,700 |
| **Annual Impact 2017 thru 2021** | **$20,900** | **$20,900** | **$20,900** | **$295,300** |
| **Annual Impact 2022 thru 2024*** | **$10,700** | **$10,700** | **$10,700** | **$212,600** |

* Annual impact after 2021 excludes the Title V Facilities since they have a shorter permit validity term than the synthetic minors and small facilities.

** Represents the opportunity cost to state government that offsets an equal amount of permitting activity that could have been used for another purpose. This analysis assumes that the permit fee would completely offset the cost of staff time.

Table 8, Net Present Value of the Fiscal Impact of the Proposed Rules of the SIP Call for Start-up, Shut-down, and Malfunction in North Carolina, shows an estimate of the rule impacts during an eight-year period of analysis, and applying a 7% discount factor, as required by statute, to calculate net present values (NPV):

- NPVs for the costs and benefits on State government are each $105,700, netting out to zero,
- NPV for the private sector is about $1.61 million, and
- NPV of total impacts, costs and benefits, is $1.82 million. Note that the NPV of the net impact of the rules just $1.61 million, since the two state impacts net out to zero.

**Table 8. Net Present Value of the Fiscal Impact Projection of the Proposed Rules of the SIP Call for Start-up, Shut-down, and Malfunction in North Carolina**

| Year | Local Program Permit Modification Fee Revenue | State Government Permit Modification Fee Revenue | State Government Staff Cost for Modification* | Costs to Affected Sources (Private Sector and Government Owned) | Total Impact |
|---|---|---|---|---|---|
| 2017 | $0 | $20,900 | $20,900 | $295,300 | $337,100 |
| 2018 | $0 | $20,900 | $20,900 | $295,300 | $337,100 |
| 2019 | $0 | $20,900 | $20,900 | $295,300 | $337,100 |
| 2020 | $0 | $20,900 | $20,900 | $295,300 | $337,100 |
| 2021 | $0 | $20,900 | $20,900 | $295,300 | $337,100 |
| 2022 | $0 | $10,700 | $10,700 | $212,600 | $234,000 |
| 2023 | $0 | $10,700 | $10,700 | $212,600 | $234,000 |
| 2024 | $0 | $10,700 | $10,700 | $212,600 | $234,000 |
| **NPV** | **$0** | **$105,700** | **$105,700** | **$1,608,600** | **$1,820,000** |

Environmental Benefits

Under the proposed adoption, 15A NCAC 02D .0545, a facility may request a source specific start-up and shut-down work practice standard be added to their permit. The required elements to be included in this work practice standard under Paragraph (k) are similar to the items listed in Paragraph (g) under the current rule, 15A NCAC 02D .0535, that the Director would consider in determining if excess emissions are unavoidable.

Under the proposed adoption, 15A NCAC 02D .0545, a facility may request a source specific malfunction work practice standard be added to their permit. The required elements to be included in this work practice standard under Paragraph (d) are similar to the items listed in Paragraph (c) under the current rule, 15A NCAC 02D .0535, that the Director would consider in determining if excess emissions are the result of a malfunction.

The environmental benefits of the source specific start-up and shut-down work practice standard and source specific malfunction work practice standard are indeterminate. The DAQ believes that for many facilities, the start-up and shut-down procedures under the proposed adoption will be similar to those procedures under the current rule. Malfunctions are unexpected events. Under both the current rule and proposed new rule, malfunctions are required be repaired as expeditiously as practicable.

These rule changes are unlikely to create measurable environmental benefits. Regardless of any permit modifications, sources must be in compliance at all times. Any permit modifications are simple explicate attempts to address these sources in advance of expected SSM issues.

## VI. Conclusions

This analysis estimated private sector impacts for permit modifications and consultants equal to about $204,000 to $279,000 annually. Government owned facilities are assumed to submit case-by-case permit modifications at an estimated cost of about $9,000 to $16,000 per year. Annually, 85 affected facilities, including those that are government owned, are estimated to spend about $213,000 to $295,000 to comply with the proposed rules.

The State of North Carolina, Division of Air Quality expects increases in staff review time, but that activity will be offset with permit modification revenues equal to $10,700 to $20,900 annually. Similarly, any impacts are indirect for the three units of local government (Mecklenburg County Air Quality, Western NC Regional Air Quality Agency, and Forsyth County Office of Environmental Assistance and Protection) that operate air quality programs in North Carolina. These units of local government adopt administrative rules that mirror state rules, but their actions do not require estimated impacts for this analysis.

The estimated annual impacts of the change to the private sector begin in 2017. The estimated annual costs of these proposed rules is not substantial as defined in North Carolina's Administrative Procedures Act in NC General Statute 150B-21.4, Fiscal and Regulatory Impact Analysis on Rules. The term "substantial economic impact" means an aggregate financial impact on all persons affected of at least one million dollars ($1,000,000) in a 12-month period.

However, it is important to note that any cost estimate should recognize the possibility that the legal challenge survives in the court. Under such circumstances, the existing 15A NCAC 02D Section .0535 essentially remains in effect and there will be no change from the baseline in this analysis.

## APPENDIX

## Proposed Rule Text

15A NCAC 02D .0535 is proposed for amendment as follows:

**15A NCAC 02D .0535 EXCESS EMISSIONS REPORTING AND MALFUNCTIONS**

(a) Applicability: 15A NCAC 02D .0535 shall not be in effect if 15A NCAC 02D .0545 is valid. This Rule shall not apply to sources to which Rule .0524, .1110, or .1111 of this Subchapter applies. In the event that United States Environmental Protection Agency's regulation, *State Implementation Plans: Response to Petition for Rulemaking; Restatement and Update of EPA's SSM Policy Applicable to SIPs; Findings of Substantial Inadequacy; and SIP Calls to Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown and Malfunction*, published in the Code of Federal Regulations (CFR) at 40 CFR 52 on June 12, 2015, is:

(1) declared or adjudged to be invalid or unconstitutional or stayed by the United States Court of Appeals for the Fourth Circuit, by the District of Columbia Circuit, or by the United States Supreme Court; or

(2) withdrawn, repealed, revoked, or otherwise rendered of no force and effect by the United States Environmental Protection Agency, Congress, or Presidential Executive Order;

such action shall render Rule .0545 of this Subchapter as invalid, void, stayed, or otherwise without force and effect upon the date such action becomes final and effective. At the time of such action, sources that were subject to Rule .0545 of this Subchapter shall be subject to this Rule.

~~(a)~~(b) For the purposes of this ~~Rule~~ Rule, the following definitions apply:

(1) "Excess Emissions" means an emission rate that exceeds any applicable emission limitation or standard allowed by any rule in Sections .0500, .0900, .1200, or .1400 of this Subchapter; ~~or~~ by a permit condition; or that exceeds an emission limit established in a permit issued under 15A NCAC 02Q .0700.

(2) "Malfunction" means any unavoidable failure of air pollution control equipment, process equipment, or process to operate in a normal and usual manner that results in excess emissions. Excess emissions during periods of routine start-up and shut-down of process equipment ~~are~~ shall not be considered a malfunction. Failures caused entirely or in part by poor maintenance, careless ~~operations~~operations, or any other upset condition within the control of the emission source are not considered a malfunction.

(3) "Start-up" means the initial commencement of operation or subsequent commencement of operation of any source that has shut-down or ceased operation for a period sufficient to cause temperature, pressure, process, chemical, or a pollution control device imbalance that would result in excess emission.

(4) "Shut-down" means the cessation of the operation of any source for any purpose.

~~(b) This Rule does not apply to sources to which Rules .0524, .1110, or .1111 of this Subchapter applies unless excess emissions exceed an emission limit established in a permit issued under 15A NCAC 02Q .0700 that is more stringent than the emission limit set by Rules .0524, .1110 or .1111 of this Subchapter.~~

(c) Any excess emissions that do not occur during start-up or shut-down are considered a violation of the ~~appropriate~~ applicable rule unless the owner or operator of the source of excess emissions demonstrates to the Director, that the excess emissions are the result of a malfunction. To determine if the excess emissions are the result of a malfunction, the Director shall consider, along with any other pertinent information, the following:

(1) ~~The~~ the air cleaning device, process equipment, or process has been maintained and operated, to the maximum extent practicable, consistent with good practice for minimizing emissions;

(2) ~~Repairs~~repairs have been made expeditiously when the emission limits have been exceeded;

(3) ~~The~~the amount and duration of the excess emissions, including any bypass, have been minimized to the maximum extent practicable;

(4) ~~All~~all practical steps have been taken to minimize the impact of the excess emissions on ambient air quality;

(5) ~~The~~the excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance;

(6) ~~The~~the requirements of Paragraph (f) of this Rule have been met; and

(7) ~~If~~if the source is required to have a malfunction abatement plan, it has followed that plan. ~~All malfunctions shall be repaired as expeditiously as practicable. However, the Director shall not excuse excess emissions caused by malfunctions from a source for more than 15 percent of the operating time during each calendar year. The Director may require the owner or operator of a facility to maintain records of the time that a source operates when it or its air pollution control equipment is malfunctioning or otherwise has excess emissions.~~

All malfunctions shall be repaired as expeditiously as practicable. The Director shall not excuse excess emissions caused by malfunctions from a source for more than 15 percent of the operating time during each calendar year. The Director may require the owner or operator of a facility to maintain records of the time that a source operates when it or its air pollution control equipment is malfunctioning or otherwise has excess emissions.

(d) All electric utility boiler units shall have a malfunction abatement plan approved by the Director as satisfying the requirements of Subparagraphs ~~(1)~~(d)(1) through ~~(3)~~ (d)(3) of this Paragraph. In addition, the Director may require any other source to have a malfunction abatement plan approved by the Director as satisfying the requirements of Subparagraphs ~~(1)~~(d)(1) through ~~(3)~~ (d)(3) of this Paragraph. If the Director requires a malfunction abatement plan for a source other than an electric utility boiler, the owner or operator of that source shall submit a malfunction abatement plan within 60 days after receipt of the Director's request. The malfunction plans of electric utility boiler units and of other sources required to have them shall be implemented ~~when a malfunction or other breakdown occurs.~~ at all times. The purpose of the malfunction abatement plan is to prevent, detect, and correct malfunctions or equipment failures that could result in excess emissions. A malfunction abatement plan shall contain:

(1) a ~~complete~~ preventive maintenance program including:

(A) the identification of individuals or positions responsible for inspecting, ~~maintaining~~maintaining, and repairing air cleaning devices;

(B) a description of the items or conditions that will be inspected and maintained;

(C) the frequency of the inspection, maintenance services, and repairs; and

(D) an identification and quantities of the replacement parts that shall be maintained in inventory for quick replacement;

(2) an identification of the source and air cleaning operating variables and outlet variables, such as opacity, grain loading, and pollutant concentration, that may be monitored to detect a malfunction or failure; the normal operating range of these variables and a description of the method of monitoring or surveillance procedures and of informing operating personnel of any malfunctions, including alarm systems, ~~lights~~lights, or other indicators; and

(3) a description of the corrective procedures that the owner or operator will take in case of a malfunction or failure to achieve compliance with the applicable rule as expeditiously as ~~practicable~~practicable, but no longer than the next boiler or process outage that would provide for an orderly repair or correction of the malfunction or 15 days, whichever is shorter. If the owner or operator anticipates that the malfunction would continue for more than 15 days, a case-by-case repair schedule shall be established by the Director with the source. The owner or operator shall maintain logs to show that the operation and maintenance parts of the malfunction abatement plan are implemented. These logs are subject to inspection by the Director ~~or his designee~~ upon request during business hours.

(e) The owner or operator of any source required by the Director to have a malfunction abatement plan shall submit a malfunction abatement plan to the Director within ~~six months~~60 days after it has been required by the Director. The malfunction abatement plan and any amendment to it shall be reviewed by the ~~Director or his designee.~~Director. If the plan carries out the objectives described by Paragraph (d) of this Rule, the Director shall approve it. If the plan does not carry out the objectives described by Paragraph (d) of this Rule, the Director shall disapprove the plan. The Director shall state ~~his~~the reasons for ~~his~~the disapproval. The person who submits the plan shall submit an amendment to the plan to satisfy the reasons for the Director's disapproval within 30 days of receipt of the Director's notification of disapproval. Any person having an approved malfunction abatement plan shall submit to the Director for ~~his~~the approval amendments reflecting changes in any element of the plan required by Paragraph (d) of this Rule or amendments when requested by the Director. The malfunction abatement plan and amendments to it shall be implemented within 90 days upon receipt of written notice of approval.

(f) The owner or operator of a source of excess emissions that last for more than four hours and that results from a malfunction, a breakdown of process or control ~~equipment~~equipment, or any other abnormal conditions, shall:

(1) notify the Director ~~or his designee~~ of any such occurrence by 9:00 a.m. Eastern time of the Division's next business day of becoming aware of the occurrence and describe:

(A) name and location of the ~~facility,~~facility;

(B) the nature and cause of the malfunction or ~~breakdown,~~breakdown;

(C) the time when the malfunction or breakdown is first ~~observed,~~observed;

(D) the expected ~~duration,~~duration; and

(E) an estimated rate of emissions;

(2) notify the Director ~~or his designee~~ ~~immediately~~ by 9:00 a.m. Eastern time of the Division's next business day when the corrective measures have been accomplished;

(3) submit to the Director within 15 days after the ~~request~~notification in Subparagraph (f)(1) of this Paragraph, a written report that includes:

(A) name and location of the ~~facility,~~facility;

(B) identification or description of the processes and control devices involved in the malfunction or ~~breakdown,~~breakdown;

(C) the cause and nature of the ~~event,~~event;

(D) time and duration of the violation or the expected duration of the excess emission if the malfunction or breakdown has not been ~~fixed,~~fixed;

(E) estimated quantity of pollutant ~~emitted,~~emitted;

(F) steps taken to control the emissions and to prevent recurrences and if the malfunction or breakdown has not been fixed, steps planned to be ~~taken,~~taken; and

(G) any other pertinent information requested by the Director. ~~After the malfunction or breakdown has been corrected, the Director may require the owner or operator of the source to test the source in accordance with Section .2600 of this Subchapter to demonstrate compliance.~~

After the malfunction or breakdown has been corrected, the Director may require the owner or operator of the source to test the source in accordance with Section .2600 of this Subchapter to demonstrate compliance.

(g) Start-up and shut-down. Excess emissions during start-up and shut-down are considered a violation of the appropriate rule if the owner or operator cannot demonstrate that the excess emissions are unavoidable. To determine if excess emissions are unavoidable during ~~startup~~start-up or ~~shutdown~~shut-down, the Director shall consider the items listed in ~~Paragraphs~~ Subparagraphs (c)(1), (c)(3), (c)(4), (c)(5), and (c)(7) of this Rule along with any other pertinent information. The Director may specify for a particular source the amount, time, and duration of emissions allowed during start-up or shut-down. The owner or operator shall, to the extent practicable, operate the source and any associated air pollution control equipment or monitoring equipment in a manner consistent with best practicable air pollution control practices to minimize emissions during start-up and shut-down.

*History Note:* *Authority G.S. 143-215.3(a)(1);143-215.107(a)(4); 143-215.107(a)(5);*
*Eff. March 1, 1983;*
*Amended Eff. _____; June 1, 2008; April 1, 2001; July 1, 1998; July 1, 1996; October 1, 1991; May 1, 1990; April 1, 1986; July 1, 1984.*

15A NCAC 02D .0545 is proposed for adoption as follows:

**15A NCAC 02D .0545 TREATMENT OF MALFUNCTION EVENTS AND WORK PRACTICES FOR START-UP AND SHUT-DOWN OPERATIONS**

(a) Applicability. In the event that United States Environmental Protection Agency's regulation, *State Implementation Plans: Response to Petition for Rulemaking; Restatement and Update of EPA's SSM Policy Applicable to SIPs; Findings of Substantial Inadequacy; and SIP Calls to Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown and Malfunction*, published in the Code of Federal Regulations (CFR) at 40 CFR 52 on June 12, 2015, is:

(1) declared or adjudged to be invalid or unconstitutional or stayed by the United States Court of Appeals for the Fourth Circuit, by the District of Columbia Circuit, or by the United States Supreme Court; or

(2) withdrawn, repealed, revoked, or otherwise rendered of no force and effect by the United States Environmental Protection Agency, Congress, or Presidential Executive Order;

such action shall render this Rule as invalid, void, stayed, or otherwise without force and effect upon the date such action becomes final and effective. At the time of such action, sources that were subject to this Rule shall be subject to Rule .0535 of this Subchapter. This Rule shall not apply to sources to which Rule .0524, .1110, or .1111 of this Subchapter applies.

(b) For the purposes of this Rule, the following definitions apply:

(1) "Excess Emissions" means an emission rate that exceeds any applicable emission limitation or standard allowed by any rule in Sections .0500, .0900, .1200, or .1400 of this Subchapter; by a permit condition; or that exceeds an emission limit established in a permit issued pursuant to 15A NCAC 02Q .0700.

(2) "Malfunction" means any unavoidable failure of air pollution control equipment, process equipment, or process to operate in a normal and usual manner. Failures caused entirely or in part by poor maintenance, careless operations or any other upset condition within the control of the emission source shall not be considered a malfunction.

(3) "Start-up" means the initial commencement of operation or subsequent commencement of operation of any source that has shut-down or ceased operation for a period sufficient to cause temperature, pressure, process, chemical, or a pollution control device imbalance that would result in excess emissions.

(4) "Shut-down" means the cessation of the operation of any source for any purpose.

(c) Malfunctions. All facilities subject to this rule shall:

(1) Comply with the otherwise applicable emissions limits; or

(2) Comply with the source specific malfunction work practice standard permit condition described in Paragraph (d) of this Rule.

(d) Source Specific Malfunction Work Practice Standard Permit Condition.

(1) A facility may request a source specific malfunction work practice standard to be included in the state and federal enforceable section of its air permit, after review by EPA and the public.

(2) The source specific malfunction work practice standard shall minimize emissions during the malfunction event and require the malfunction duration to be minimized.

(3) Subparagraphs (e)(1) and (e)(5) of this Rule shall be addressed in the source specific malfunction work practice standard. Any facility requesting a source specific malfunction work practice standard shall meet the requirements of Subparagraphs (f)(1) through (f)(3) of this Rule.

(4) Requests shall be made through the application for a permit, permit modification, or permit renewal pursuant to the permit application requirements in 15A NCAC 02Q .0300 or .0500. The public notice requirements specified in 15A NCAC 02Q .0306 and .0307 shall be followed for all proposed work practice standards in non-Title V permits. Public notice requirements specified in 15A NCAC 02Q .0521 shall be followed for all proposed work practice standards in Title V permits.

(5) At all times, the source shall be operated in a manner consistent with good practice for minimizing emissions and the owner or operator shall use their best efforts regarding planning, design, and operating procedures. The owner or operator's actions during malfunction periods shall be documented by properly signed, contemporaneous operating logs or other relevant evidence.

(6) Failure to implement or follow the Source Specific Malfunction Work Practice Standard Permit Condition shall be a violation of Paragraph (d) of this Paragraph.

(7) Facilities that follow a Source Specific Malfunction Work Practice Standard Permit Condition during a malfunction that has been addressed in the Source Specific Malfunction Work Practice Standard Permit Condition shall be deemed in compliance.

(e) The Director shall determine the appropriate enforcement response for excess emissions due to a malfunction. The Director shall consider, along with any other pertinent information, the following:

(1) The air cleaning device, process equipment, or process has been maintained and operated, to the maximum extent practicable, consistent with good practice for minimizing emissions;

(2) Repairs have been made expeditiously when the emission limits have been exceeded;

(3) The amount and duration of the excess emissions, including any bypass, have been minimized to the maximum extent practicable;

(4) All practical steps have been taken to minimize the impact of the excess emissions on ambient air quality;

(5) The excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance;

(6) The requirements of Paragraph (h) of this Rule have been met; and

(7) If the source is required to have a malfunction abatement plan, the source has followed that plan. All malfunctions shall be repaired as expeditiously as practicable. The facility shall maintain

records of the time that a source operates when it or its air pollution control equipment is malfunctioning or otherwise has excess emissions.

(f) All electric utility boiler units shall have a malfunction abatement plan approved by the Director as satisfying the requirements of Subparagraphs (f)(1) through (f)(3) of this Paragraph. In addition, the Director may require any other source to have a malfunction abatement plan approved by the Director as satisfying the requirements of Subparagraphs (f)(1) through (f)(3) of this Paragraph. If the Director requires a malfunction abatement plan for a source other than an electric utility boiler, the owner or operator of that source shall submit a malfunction abatement plan within 60 days after receipt of the Director's request. The malfunction abatement plans of electric utility boiler units and of other sources required to have malfunction abatement plans shall be implemented at all times. The purpose of the malfunction abatement plan is to prevent, detect, and correct malfunctions that may result in excess emissions. A malfunction abatement plan shall contain:

(1) a preventive maintenance program including:

(A) the identification of individuals or positions responsible for inspecting, maintaining, and repairing air cleaning devices;

(B) a description of the items or conditions that will be inspected and maintained;

(C) the frequency of the inspection, maintenance services, and repairs; and

(D) an identification and quantities of the replacement parts that shall be maintained in inventory for quick replacement;

(2) an identification of the source and air cleaning operating variables and outlet variables that may be monitored to detect a malfunction; the normal operating range of these variables and a description of the method of monitoring and of informing operating personnel of any malfunctions; and

(3) a description of the corrective procedures that the owner or operator will take in case of a malfunction or failure to achieve compliance with the applicable rule as expeditiously as practicable. The owner or operator shall maintain logs to show that the operation and maintenance parts of the malfunction abatement plan are implemented.

(g) The owner or operator of any source required by the Director to have a malfunction abatement plan shall submit a malfunction abatement plan to the Director within 60 days after it has been required by the Director. The malfunction abatement plan and any amendment to it shall be reviewed by the Director. If the plan carries out the objectives described by Paragraph (f) of this Rule, the Director shall approve it. If the plan does not carry out the objectives described by Paragraph (f) of this Rule, the Director shall disapprove the plan. The owner or operator shall submit an amendment to the plan to satisfy the plan requirements within 30 days of receipt of the Director's notification. Any person having an approved malfunction abatement plan shall submit to the Director for approval amendments reflecting changes in any element of the malfunction abatement plan required by Paragraph (f) of this Rule or amendments when requested by the Director. The malfunction abatement plan and amendments to it shall be implemented within 90 days upon receipt of written notice of approval.

(h) The owner or operator of a source of excess emissions that last for more than four hours and that results from a malfunction shall:

(1) notify the Director of any such occurrence by 9:00 a.m. Eastern time of the Division's next business day of becoming aware of the occurrence and describe:

(A) name and location of the facility;

(B) the nature and cause of the malfunction;

(C) the time when the malfunction is first observed;

(D) the expected duration; and

(E) an estimated rate of emissions;

(2) notify the Director by 9:00 a.m. Eastern time of the Division's next business day when the corrective measures have been accomplished;

(3) submit to the Director, within 15 days after the notification in Subparagraph (h)(1) of this Paragraph, a written report that includes:

(A) name and location of the facility;

(B) identification or description of the processes and control devices involved in the malfunction;

(C) the cause and nature of the event;

(D) time and duration of the violation or the expected duration of the excess emission if the malfunction has not been fixed;

(E) estimated quantity of pollutant emitted;

(F) steps taken to control the emissions and to prevent recurrences and if the malfunction has not been fixed, steps planned to be taken; and

(G) any other pertinent information requested by the Director.

After the malfunction has been corrected, the Director may require the owner or operator of the source to test the source in accordance with Section .2600 of this Subchapter to demonstrate compliance.

(i) Start-up and Shut-down: During periods of start-up and shut-down, sources at facilities subject to this Rule shall comply with any one of the following:

(1) the applicable SIP emission limit in the 15A NCAC 02D rules, or a permit limit established in a permit issued pursuant to 15A NCAC 2Q .0700;

(2) the applicable work practice standards in Subparagraphs (j)(1) though (j)(13) of this Rule;

(3) work practice standards currently in effect for federal rules promulgated since 2009 that address compliance during start-up and shut-down operations for equipment that would be subject to the federal rule except for rule applicability exemptions; or

(4) source specific start-up and shut-down work practice standard permit conditions described in Paragraph (k) of this Rule.

Excess emissions during start-up and shut-down shall be considered a violation of the applicable rule if the owner or operator cannot demonstrate that the work practice standards in Subparagraphs (i)(2), (i)(3), or (i)(4) of this Paragraph were followed. Facilities may comply with Subparagraphs (i)(1) or (i)(2) of this Paragraph during start-up and shut-down without a specific permit condition. Facilities that choose to comply with Subparagraph (i)(3) of

this Paragraph during start-up and shut-down shall apply for and receive a permit condition that indicates the specific federal work practice standard that shall be followed. Failure to implement or follow the work practice standard shall be considered a violation of Subparagraph (i)(3) of this Paragraph. Facilities that choose to comply with Subparagraph (i)(4) of this Paragraph during start-up and shut-down shall apply for and receive a permit condition described in Paragraph (k) of this Rule. Failure to implement or follow the work practice standard shall be considered a violation of Subparagraph (i)(4) of this Paragraph.

(j) Generally Available Work Practices for Start-Up and Shut-Down Operations. The owner or operator shall, to the extent practicable, operate the source and any associated air pollution control equipment or monitoring equipment in a manner consistent with best practicable air pollution control practices to minimize emissions during start-up and shut-down. The following generally available work practice standards shall be followed:

(1) Periods of start-up and shut-down shall be documented in a permanent form suitable for inspection and submission to the Division. Documentation of start-ups and shut-downs shall include specific identification of each period of start-up or shut-down where a work practice standard is used and information required to demonstrate compliance with the applicable work practices. Start-up and shut-down operations shall occur as expeditiously as possible while minimizing emissions.

(2) Boilers and other combustion sources. All combustion sources shall commence operations while firing on the cleanest permitted fuel, to the extent practicable. The source shall minimize the start-up and shut-down periods to the extent practicable.

(A) For sources for which the manufacturer has established recommended procedures for start-ups and shut-downs, the source shall follow the manufacturer's recommended procedures.

(B) For sources for which there is no manufacturer-recommended procedures for start-ups and shut-downs, the source shall follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available.

(3) Baghouses shall be operated upon start-up of emission unit, or when baghouse temperature exceeds the dew point, whichever occurs later, or as specified by manufacturer.

(4) Cyclones shall be operated at all times, including start-up and shut-down of the emission unit.

(5) Electrostatic precipitators (ESP) shall be operated upon start-up of emission unit, or when effluent temperature exceeds the dew point, whichever occurs later, or as specified by manufacturer.

(6) Selective catalytic reduction (SCR) units shall be operated if catalyst bed temperature is greater than 400°F, or as specified by manufacturer.

(7) Non-selective catalytic reduction (NSCR) units shall be operated when the effluent temperature is between 700°F and 1500°F, or as specified by manufacturer.

(8) Scrubbers shall be operated at all times from initialization of start-up to completion of shut-down.

(9) Carbon adsorption shall be operated at all times from initialization of start-up to completion of shut-down.

(10) Biofilters shall be operated at all times from initialization of start-up to completion of shut-down.

(11) Sorbent injection shall be operated at all times the gas stream temperature is greater than 300°F, or as specified by manufacturer.

(12) Regenerative Thermal Oxidizers (RTO), thermal, and catalytic oxidizers shall be operated at all times from initialization of start-up to completion of shut-down.

(13) Safety and fire protection protocols shall be followed during start-up and shut-down of all sources.

(k) Source Specific Start-Up and Shut-Down Work Practice Standard Permit Condition. A facility may request a source specific start-up and shut-down work practice standard be included in the state and federal enforceable section of their air permit, after review by EPA and the public. Such requests shall be made through the application for a permit, permit modification, or permit renewal pursuant to the permit application requirements in 15A NCAC 02Q .0300 or .0500. The public notice requirements specified in 15A NCAC 02Q .0306 and .0307 shall be followed for all proposed work practice standards in non-Title V permits. Public notice requirements specified in 15A NCAC 02Q .0521 shall be followed for all proposed work practice standards in Title V permits. Requests for work practice standards for periods of start-up and shut-down shall include the following considerations:

(1) the work practice standard is specific to a source and the associated control strategy;

(2) demonstration that the use of the control strategy for the source is technically infeasible during start-up or shut-down periods;

(3) the work practice standard requires that the frequency and duration of operation in start-up or shut-down mode are minimized to the greatest extent practicable;

(4) at all times, the source shall be operated in a manner consistent with good practice for minimizing emissions and the source uses best efforts regarding planning, design, and operating procedures; and

(5) the owner or operator's actions during start-up and shut-down periods shall be documented by properly signed, contemporaneous operating logs or other relevant evidence.

Any source without a start-up and shut-down work practice standard permit condition shall be required to comply with any applicable emission limit. Facilities that follow a source specific start-up and shut-down work practice standard permit condition during start-up and shut-down shall be deemed in compliance.

*History Note:* *Authority G.S. 143-215.3(a)(1);143-215.107(a)(4); 143-215.107(a)(5);*
*Eff.* _____.